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Memoirs of the Museum of Comparative Zoölogy

AT HARVARD COLLEGE.

Vol. XXIV.

REPORTS ON AN EXPLORATION OFF THE WEST COASTS OF MEXICO, CENTRAL AND SOUTH AMERICA, AND OFF THE GALAPAGOS ISLANDS, IN CHARGE OF ALEXANDER AGASSIZ, BY THE U. S. FISH COMMISSION STEAMER "ALBATROSS," DURING 1891, LIEUT. COMMANDER Z. L. TANNER, U. S. N., COMMANDING.

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THE FISHES.

By S. GARMAN.

ONE VOLUME TEXT,

WITH NINETY-SEVEN PLATES,

AND A CHART OF THE ROUTE.

PLATES.

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CAMBRIDGE, U.S.A.:

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PLATE I.

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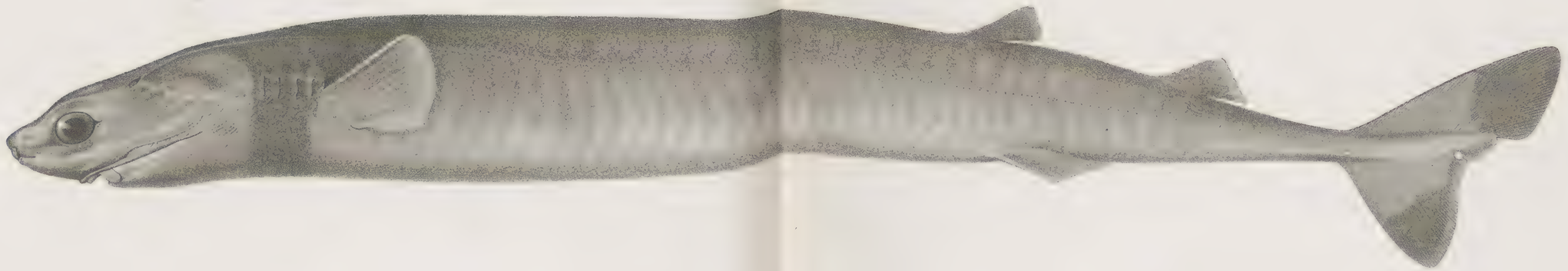
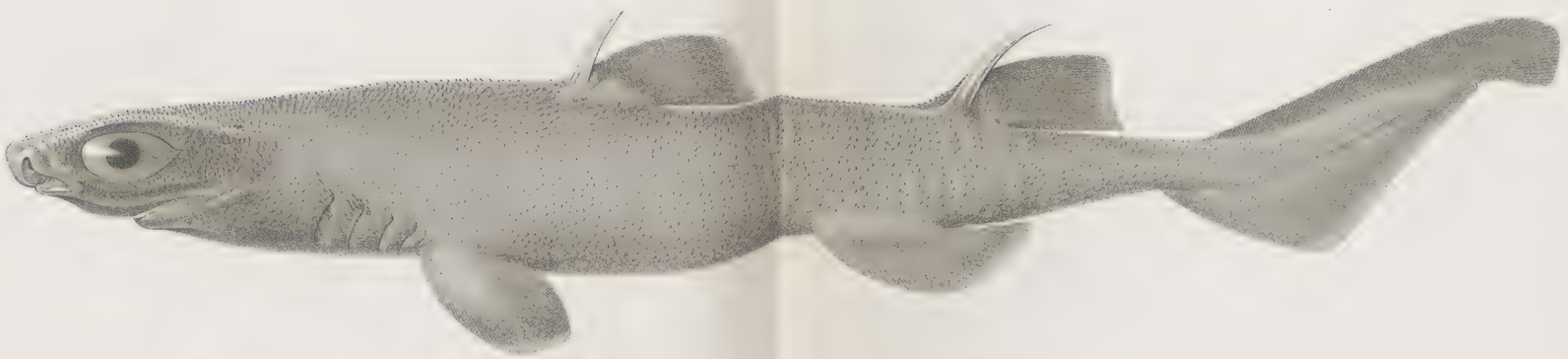
Fig. 2. Centroscyllium nigrum Garm. Page 28.





A. M. [illegible]

B. Meisel lith.

PLATE II.

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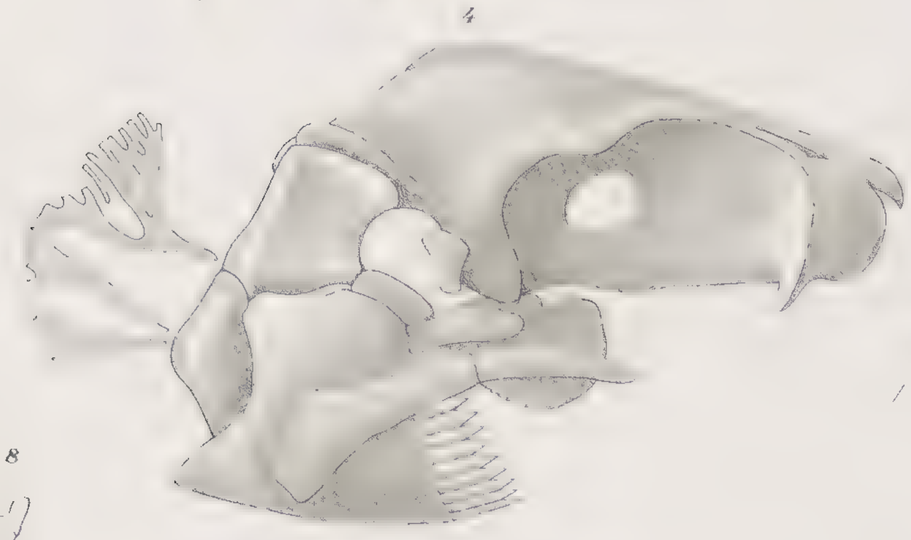
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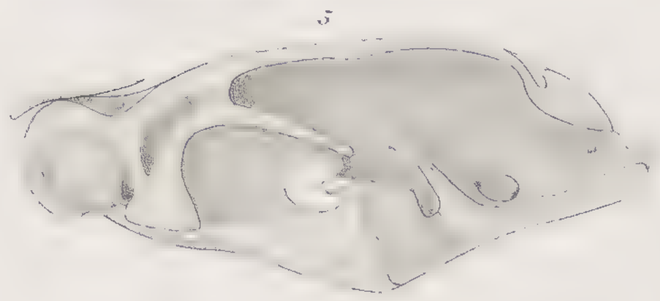
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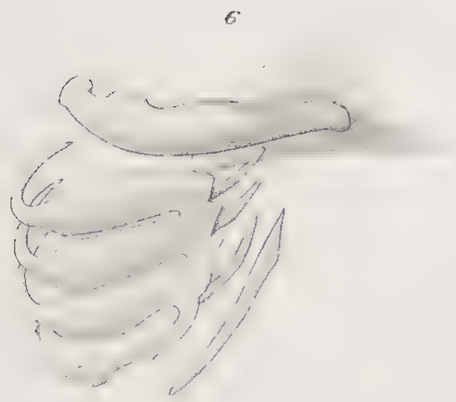
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PLATE III.

ISISTIUS BRASILIENSIS Q. G. Page 34.

Fig. 1. Cartilages of the right ventral fin and the pelvis.

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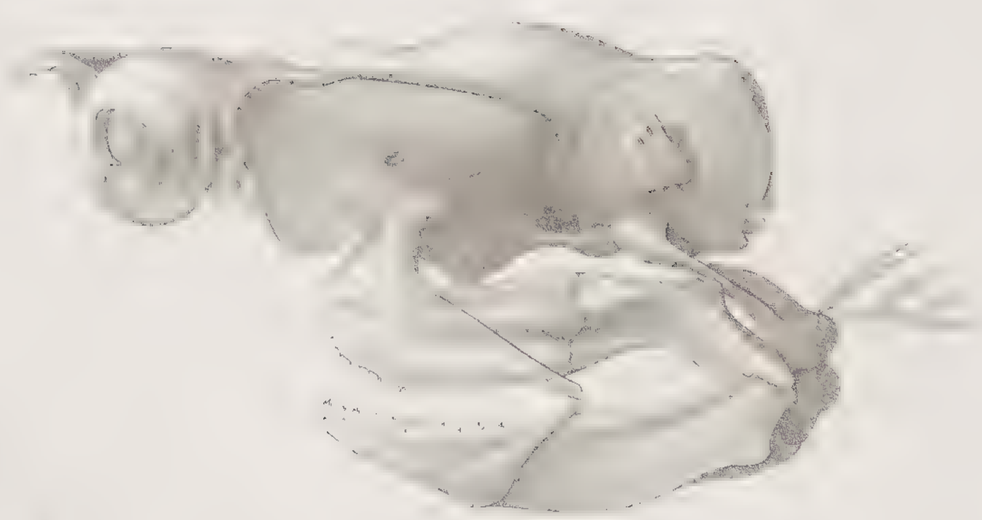

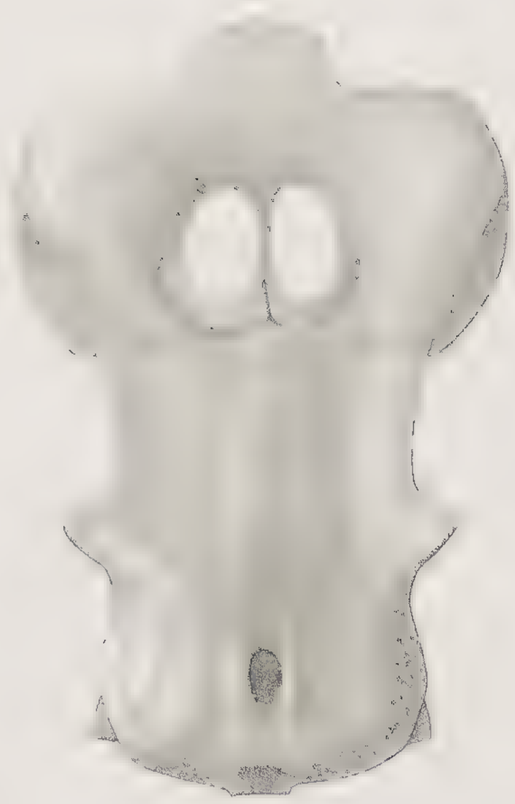

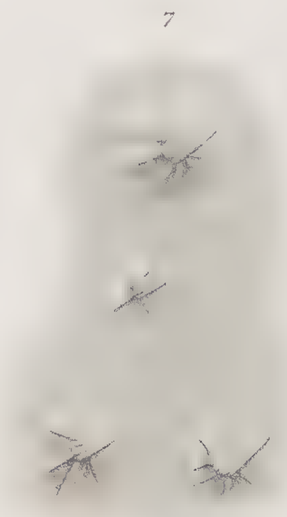

PLATE V.

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Fig. 1. Inside of skull as seen in a lougitudinal section.

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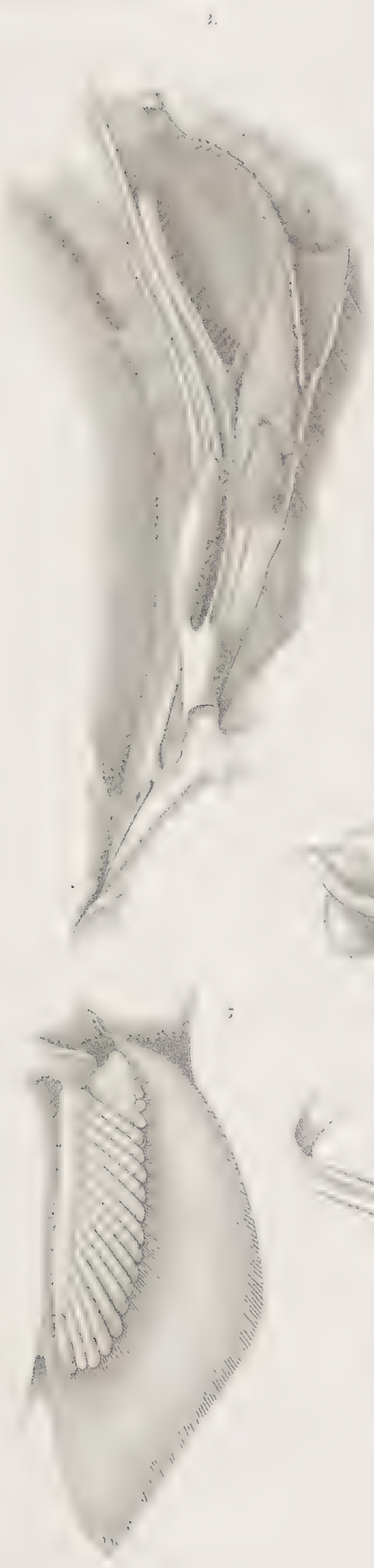
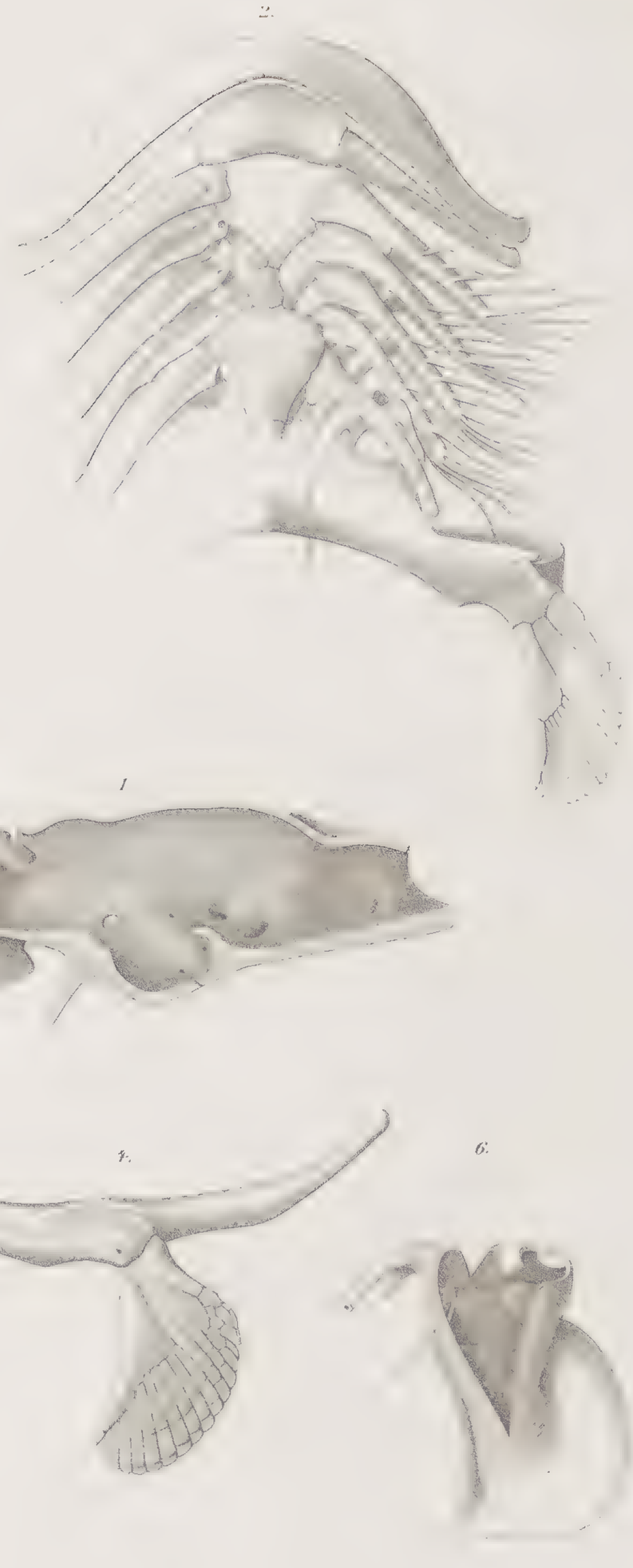
Fig. 4. Shoulder girdle and cartilages of the pectoral fin.

Fig. 5. Cartilages of the ventral fin and the pelvis.

Fig. 6. Heart, showing the valves in the bulbus.





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Figs. 1–2. Raia badia Garm. Page 22.

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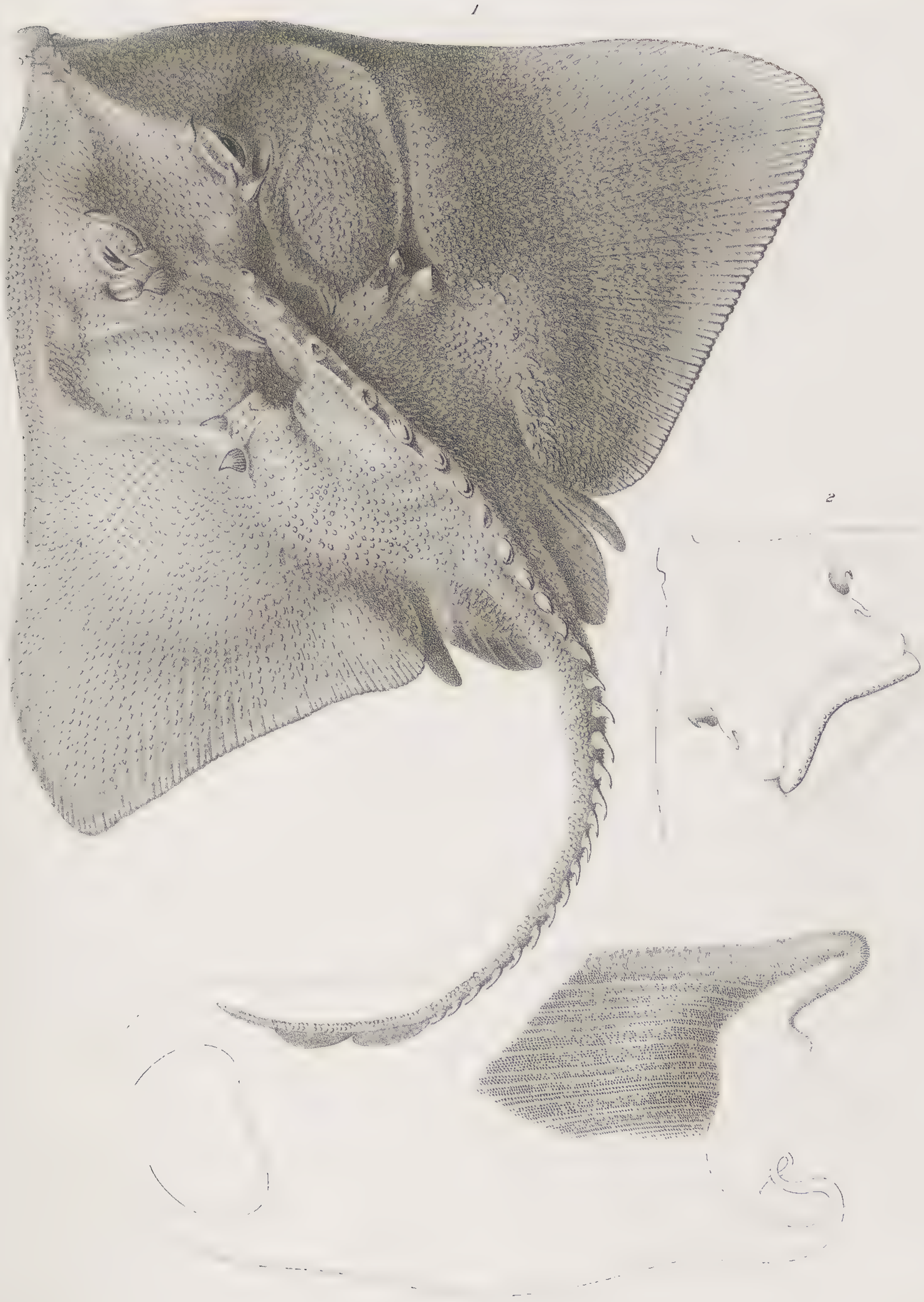

A. M. Westergren del. B. Meisel, lith.

PLATE VII.

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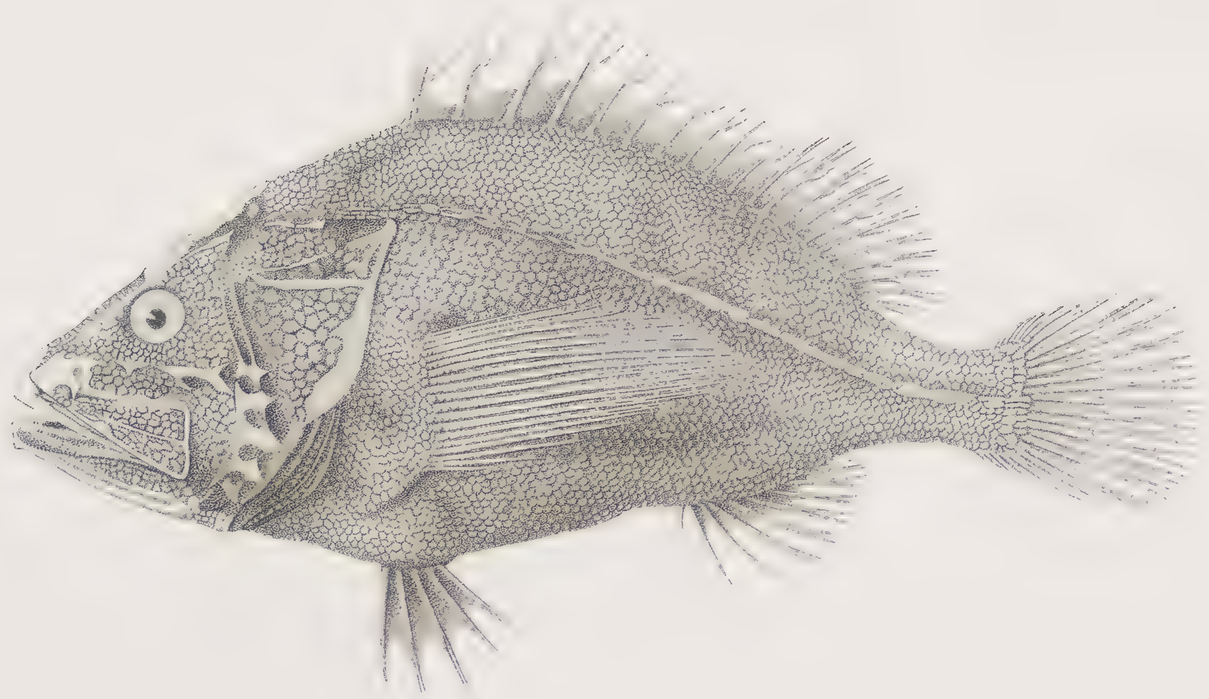
Fig. 3. Teeth from the lower jaws of the same.

A M Westergren del

B Meisel lith

PLATE VIII.

ECTREPOSEBASTES IMUS Garm. Page 53.



A. M. Westergren del.

B. Meisel lith.

PLATE IX.

ECTREPOSEBASTES IMUS Garm. Page 53.

Fig. 1. Left side of the skeleton.

Fig. 2. Mouth opened to show the dentition.

Fig. 3. Viscera as seen from the right side.

Fig. 4. Viscera as appearing from the left side.

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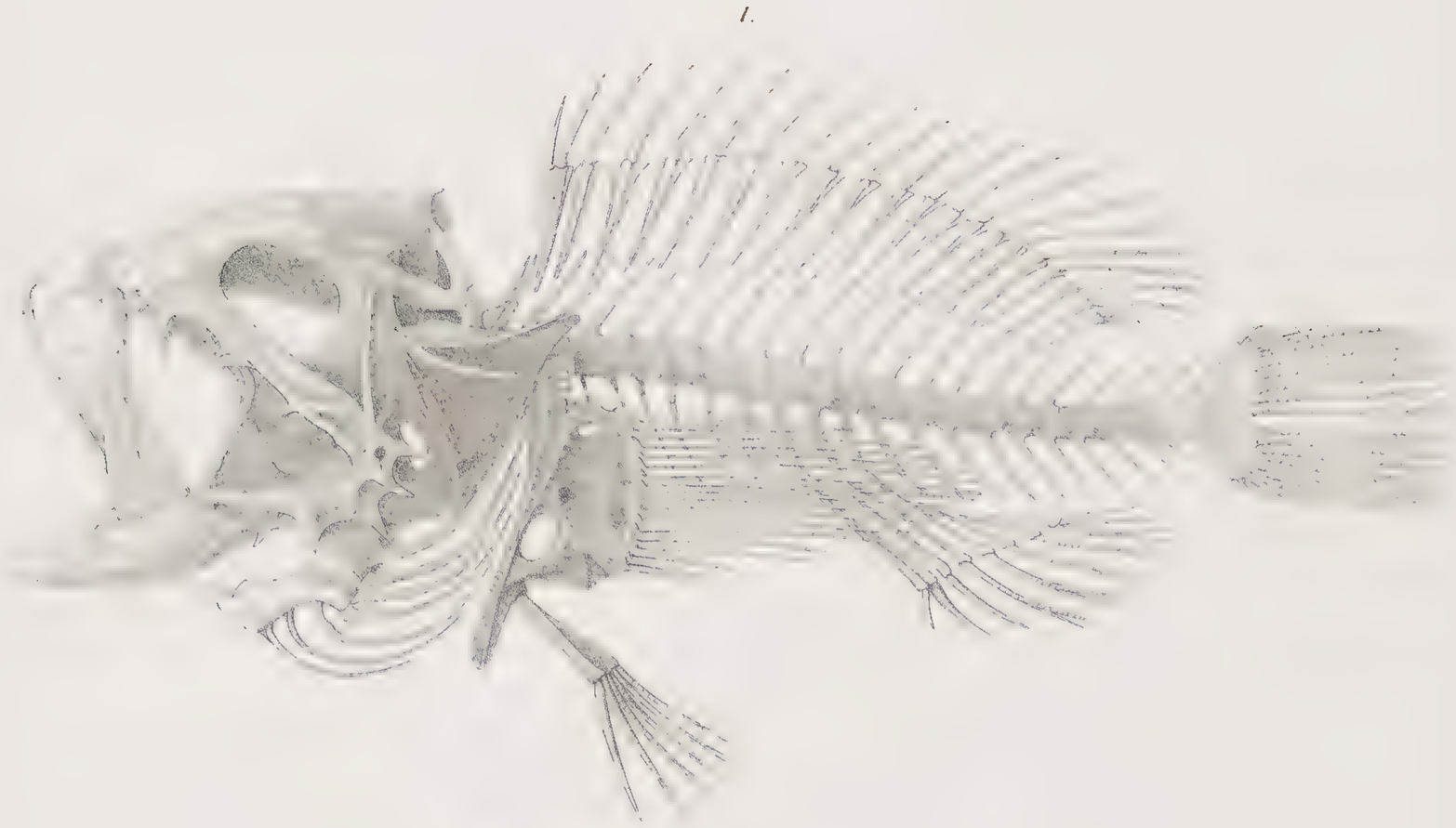

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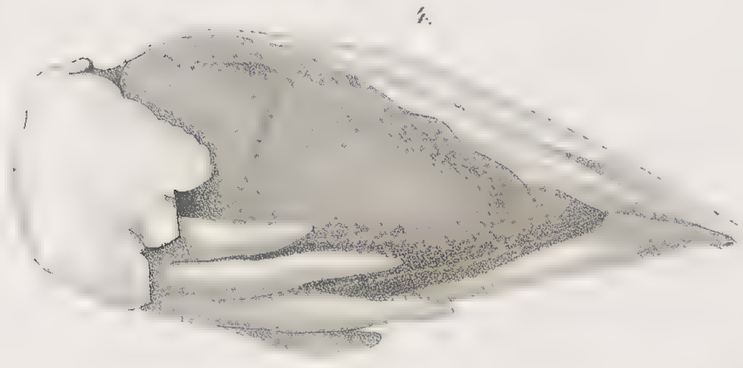

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PLATE X.

HOPLOSTETHUS PACIFICUS Garm. Page 56.

A M Westergren del. B Meisel, lith.

PLATE XI.

Fig. 1. HOPLOSTETHUS PACIFICUS Garm. Page 56.

Inside view of head in longitudinal section.

Fig. 2. Otolith of *Hoplostethus pacificus.*

Fig. 3. TRACHICHTHYS MENTO Garm. Page 58.

Figs. 4–6. Scales from the median line of the belly of *T. mento.*

Figs. 7–8. Scales from the flank of *T. mento,* enlarged.

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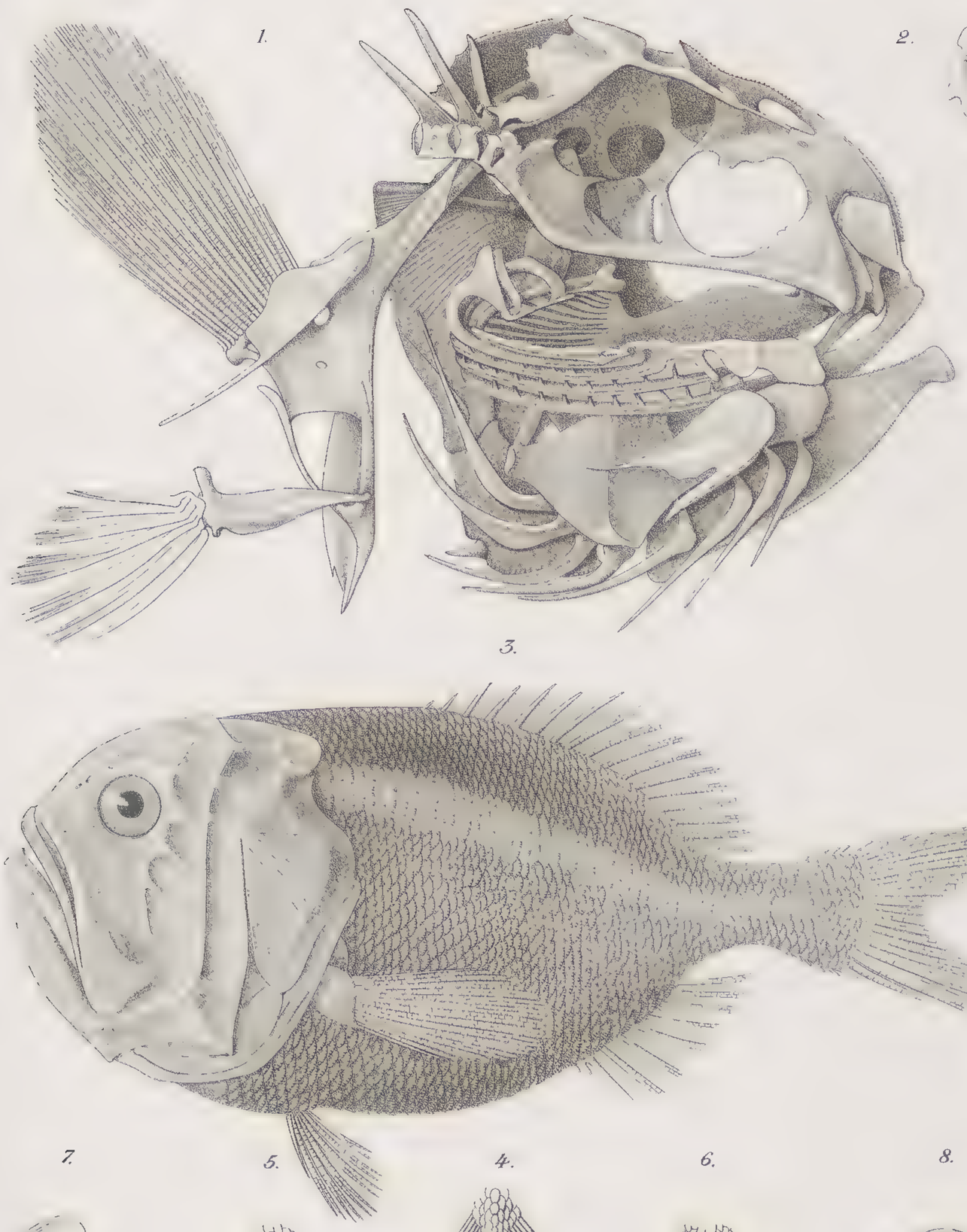

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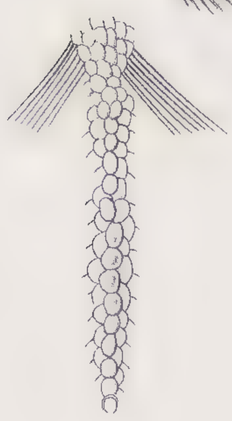

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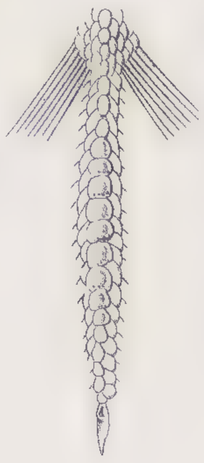

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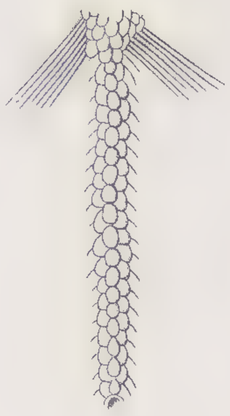

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A.M. Westergren del.

B. Mensel, lith.

PLATE XII.

CAULOLEPIS SUBULIDENS Garm. Page 60.

Fig. 1. Skeleton and viscera, from the right side.

Fig. 2. Viscera from the left side.

Fig. 3. Stomach, pyloric cæca and intestine from below.

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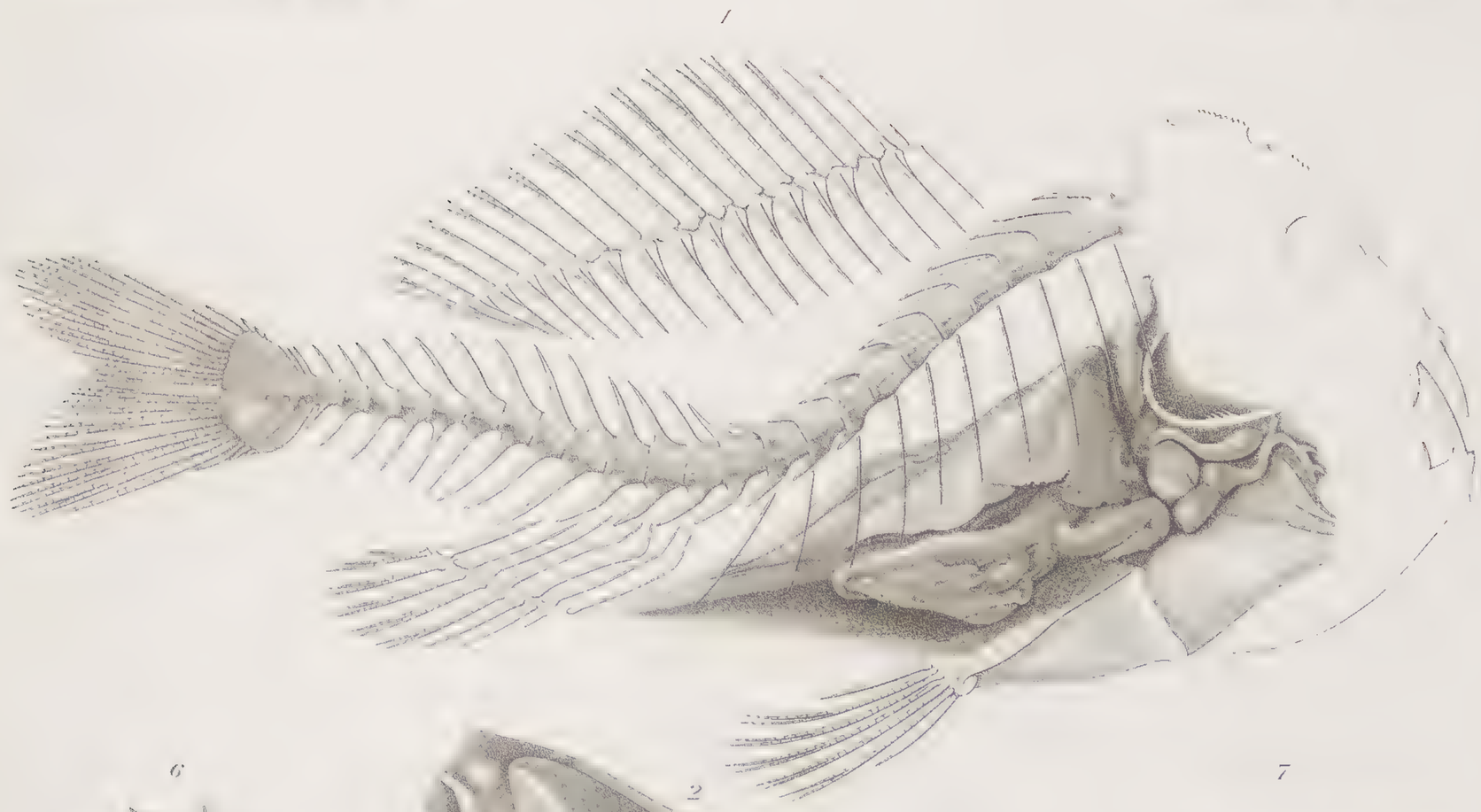
Fig. 5. Stylo-, epi-, cerato-, and basihyals, with branchiostegal rays.

Fig. 6. Top of a scale from the flank.

Fig. 7. Lateral view of one of the scales of the flank.



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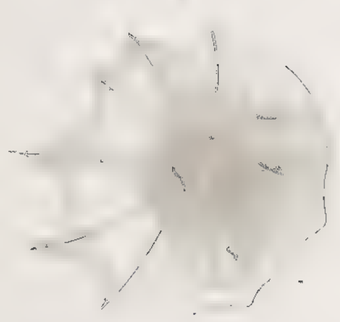

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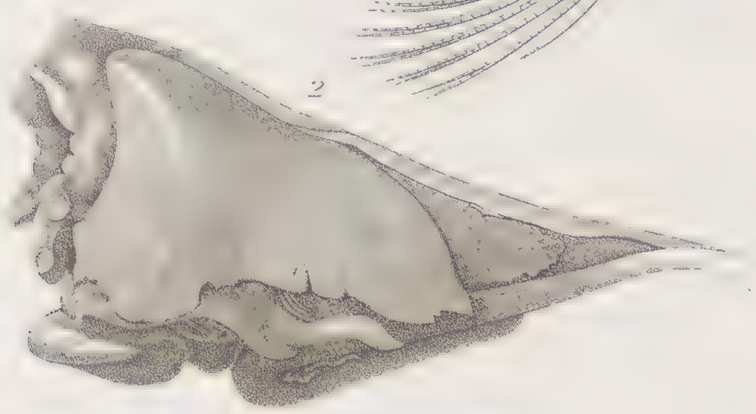

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PLATE XIII.

DOLOPICHTHYS ALLECTOR Garm. Page 81.

Fig. 1. Appearance as seen from the right side.

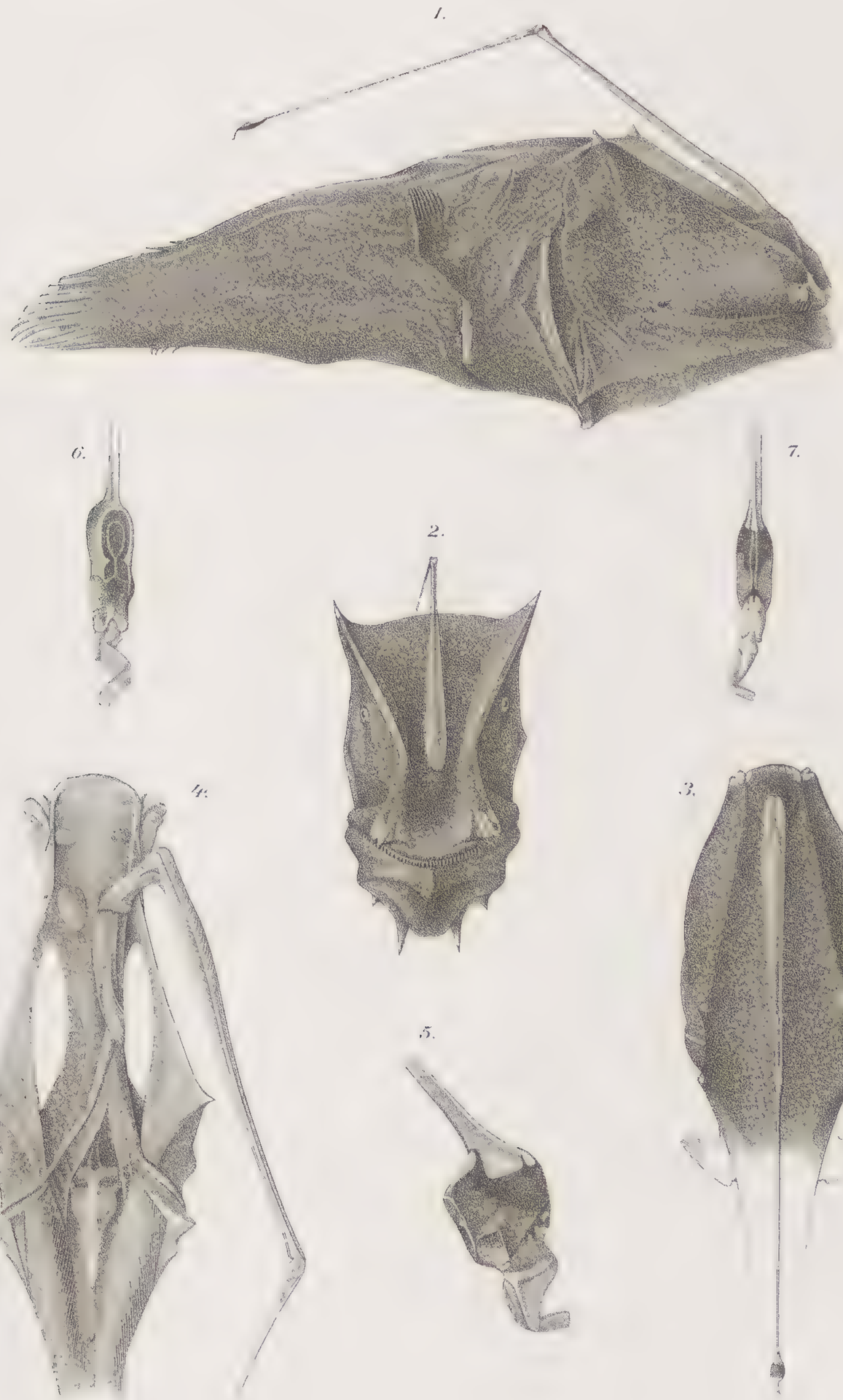
Fig. 2. Aspect as viewed in front.

Fig. 3. Upper view of head and body.

Fig. 4. Head and body from above after removal of the skin.

Fig. 5. Extremity of the illicium as seen from the side.

Figs. 6–7. Upper and lower views of the extremity of the illicium.



A.M.Westerveen del

B.Mersel, lith

PLATE XIV.

DOLOPICHTHYS ALLECTOR Garm. Page 81.

Fig. 1. Muscles and bones of the left side after removal of the skin.

Fig. 2. Skeleton as seen from the left side.

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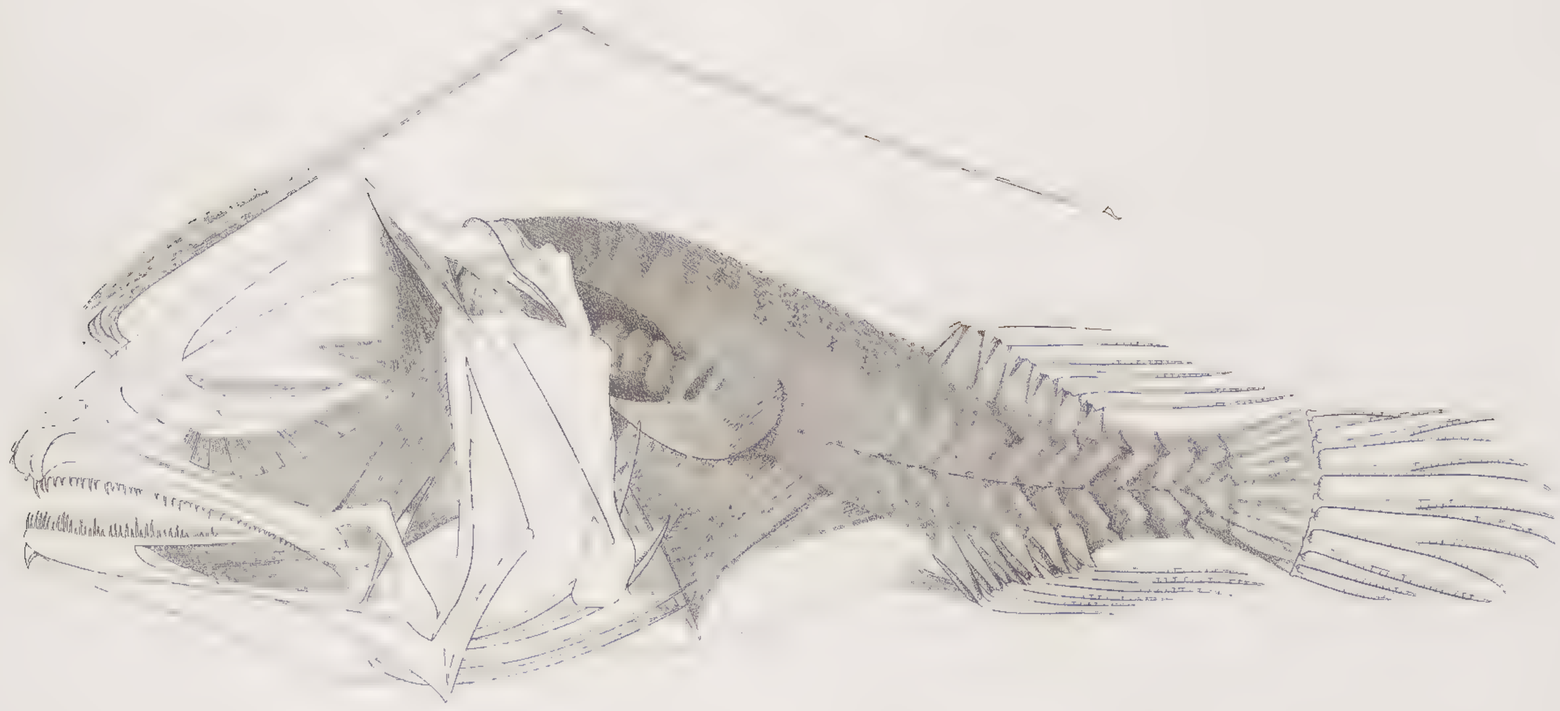

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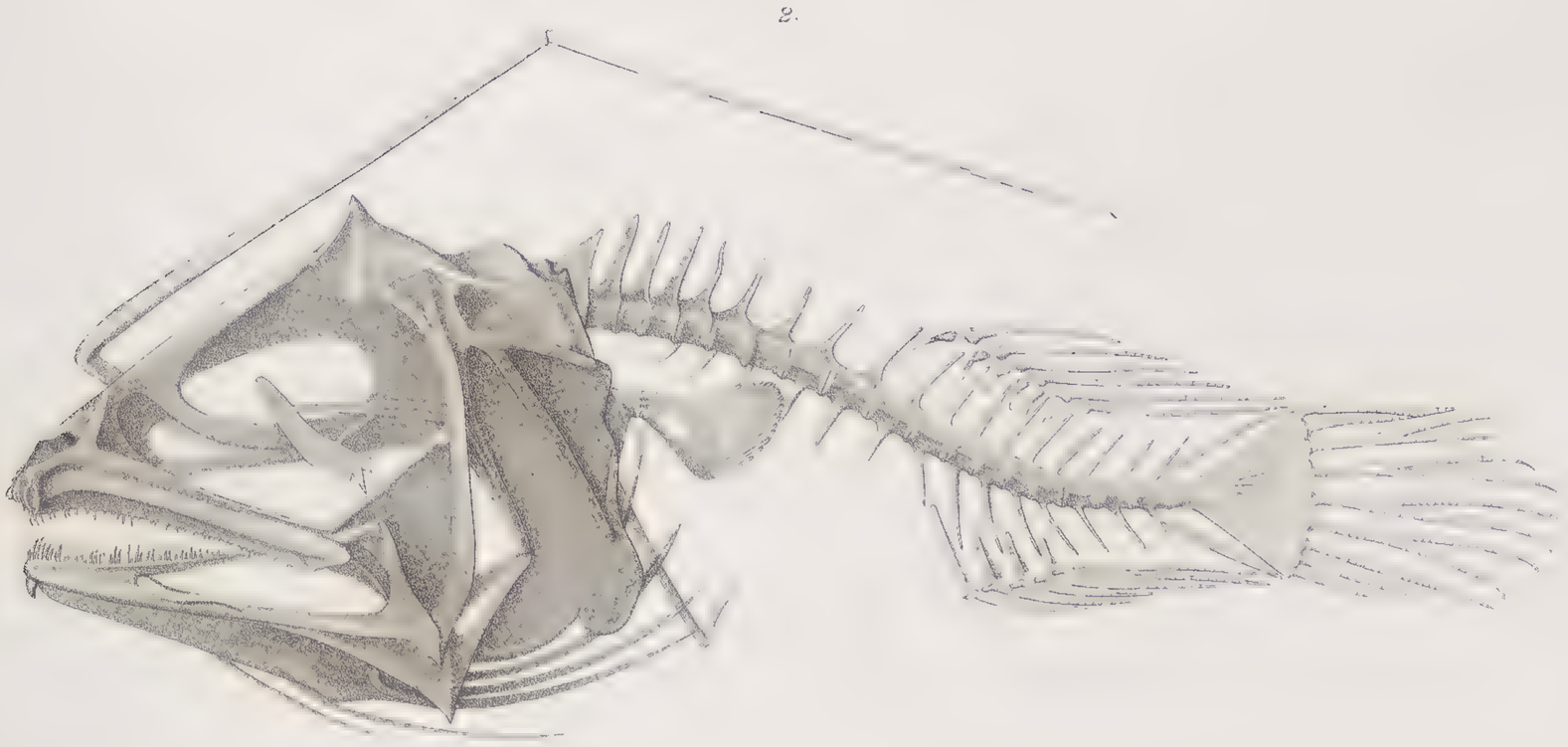

A M Westergren del

J M [illegible] t

PLATE XV.

DOLOPICHTHYS ALLECTOR Garm. Page 81.

Fig. 1. Longitudinal section of the head, showing the gills, branchial arches, etc.

Fig. 2. Branchiostegal rays, hyals, and shoulder bones.

Fig. 3. Skeletons of dorsal and anal fins.

Fig. 4. Right side of the stomach and intestine.

Fig. 5. Viscera in place, as seen from the left side.

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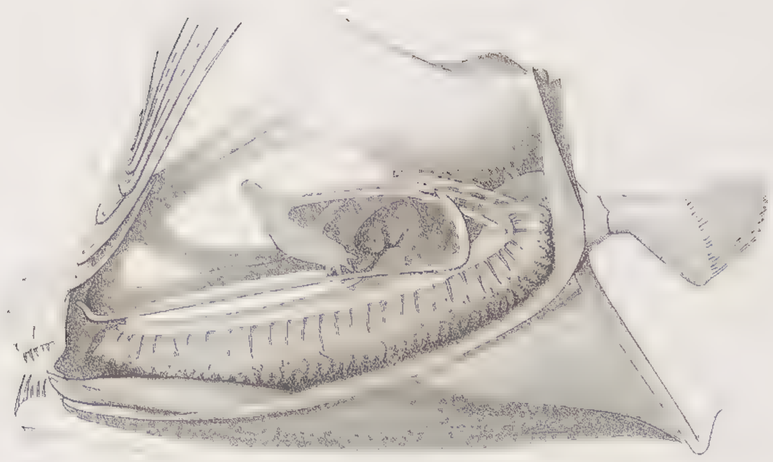

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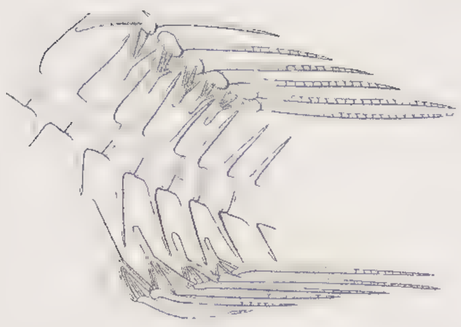

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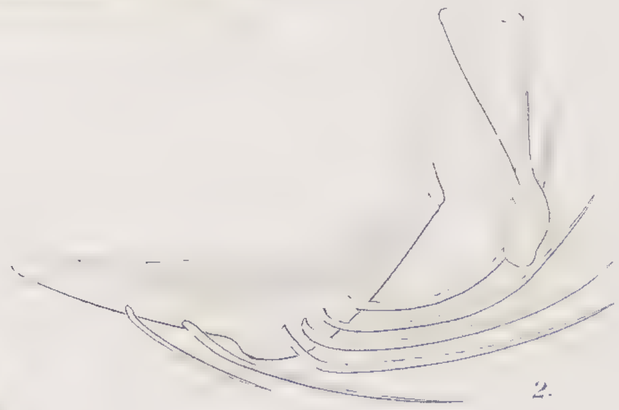

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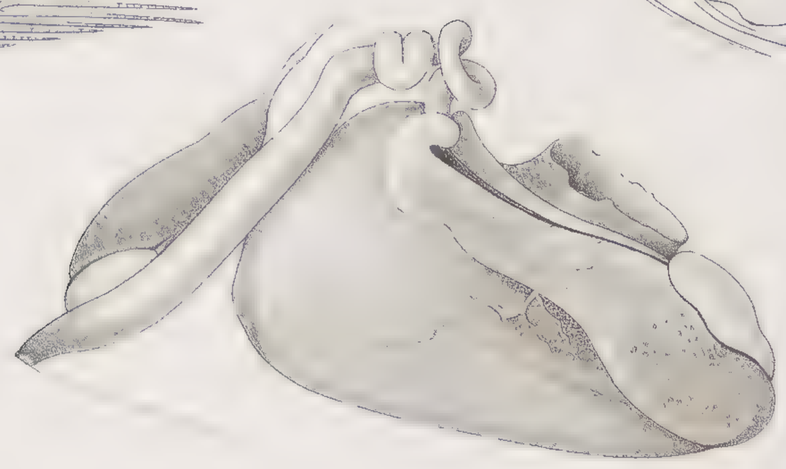

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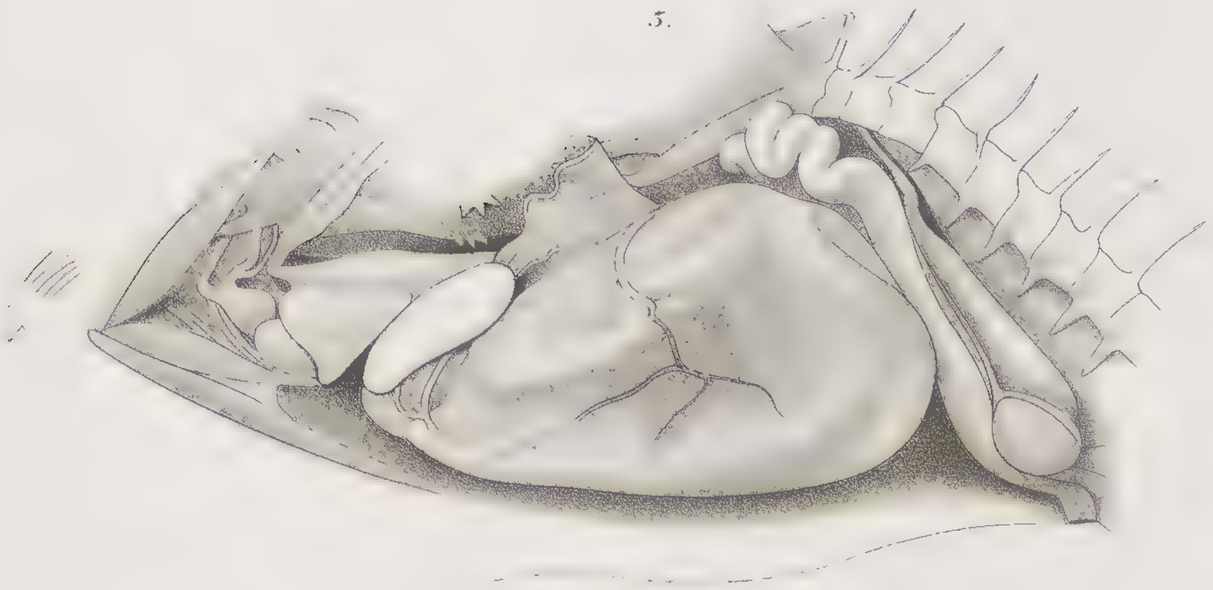


A M Westergren del

PLATE XVI.

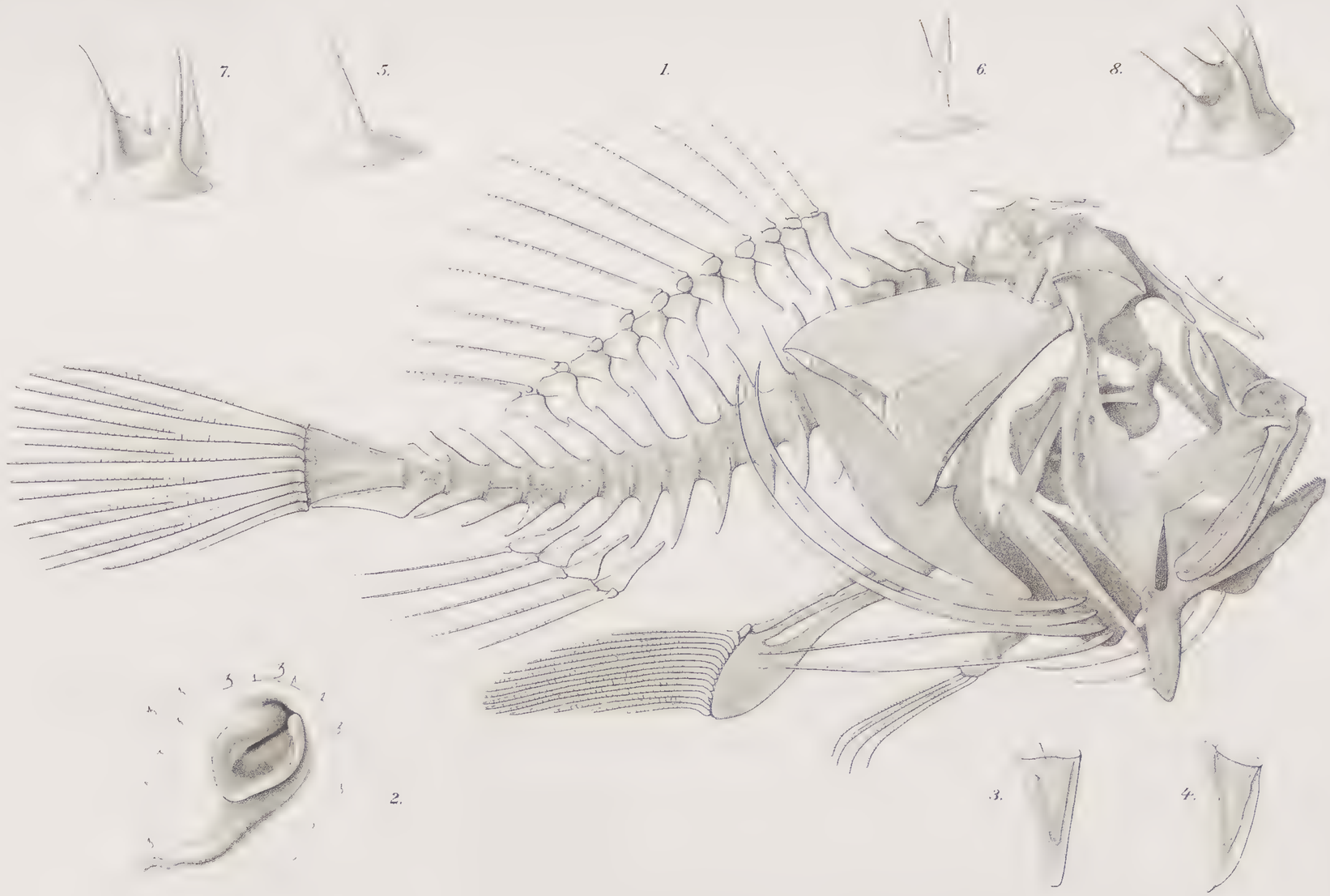
CHAUNAX COLORATUS Garm. Page 83.

Fig. 1. Skeleton as seen from the right side.

Fig. 2. One of the gill openings.

Figs. 3–4. A single tooth, as viewed from the front and the side.

Figs. 5–8. Enlarged views of different scales, from the sides.



A.M.Westergren del. B.Meisel, lith

PLATE XVII.

CHAUNAX COLORATUS Garm. Page 83.

Fig. 1. Front aspect of the head.

Fig. 2. Top of the skull, with the illicium and other dorsal rays.

Fig. 3. Shoulder girdle and pelvic bones.

Fig. 4. The hidden dorsal spine on the occiput.

Fig. 5. Hyal bones and branchiostegal rays.

Fig. 6. Scapulary arch and bones of the pectoral fin.

Fig. 7. Viscera, shown from the right side.

A.M. We[illegible] del. B. Me[illegible] lit.

PLATE XVIII.

MALTHOPSIS SPARSA Garm. Page 101.

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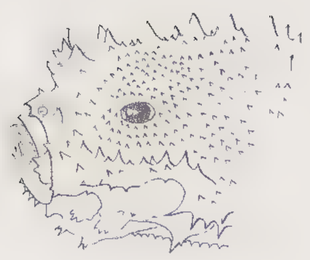

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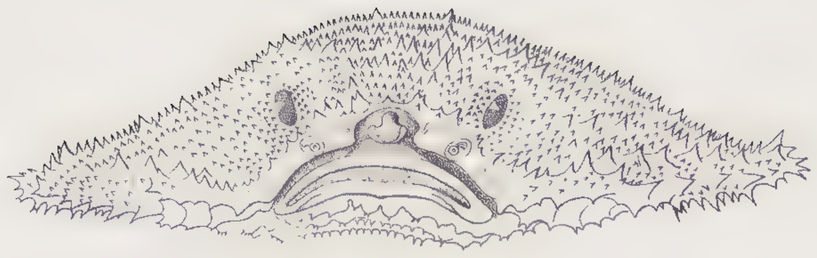

A.M Westergren del

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PLATE XIX.

MALTHOPSIS ERINACEA Garm. Page 103.

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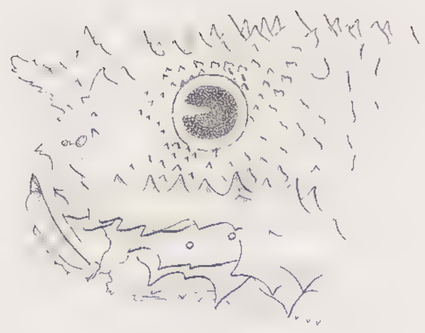

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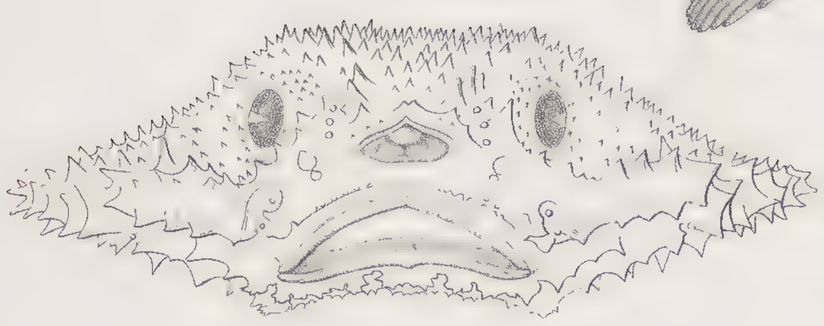

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A.M.Westergren del.

B.Meisel, lith.

PLATE XX.

DIBRANCHOPSIS SPONGIOSA Gilb. Page 97.

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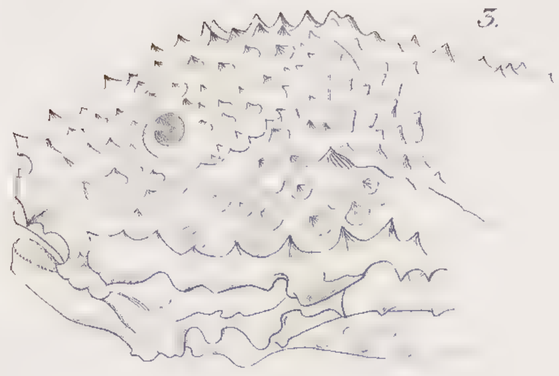

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A.M.Westergren del.

B.Meisel, lith

PLATE XXI.

MALTHOPSIS SPINULOSA Garm. Page 106.

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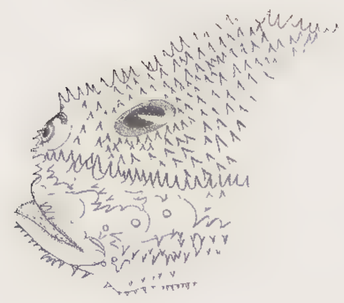

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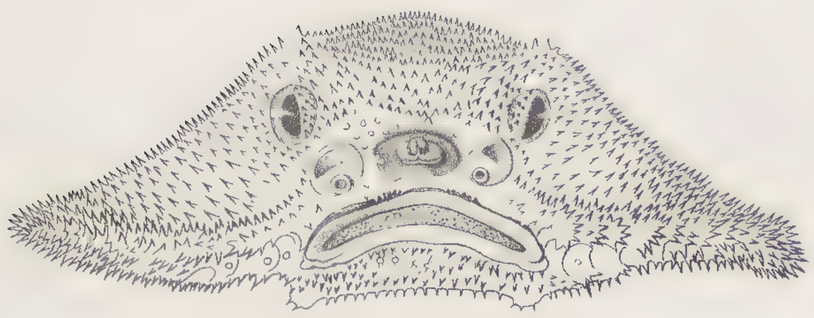
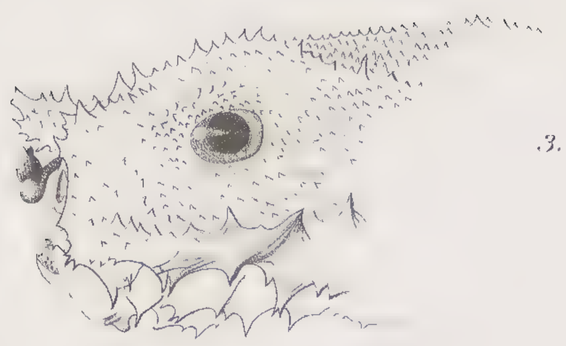


A M W-stergren del

B.Meisel lith

PLATE XXII.

MALTHOPSIS SPINOSA Garm. Page 104.



3.

1.

2.

4.

PLATE XXIII.

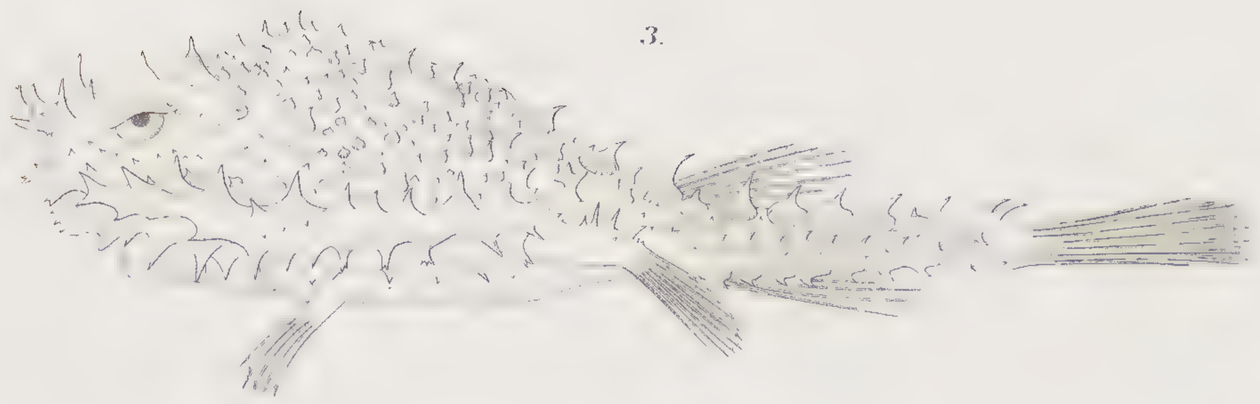
DIBRANCHUS HYSTRIX Garm. Page 92.

1.

2.

4.

3.



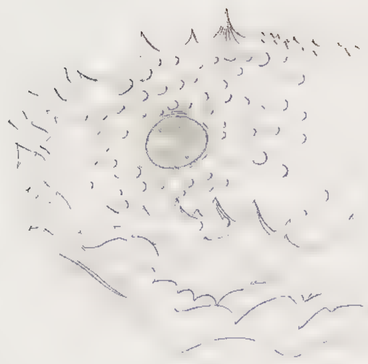
A M Westergren del.

B Meisse, lith

PLATE XXIV.

DIBRANCHUS SCABER Garm. Page 94.

1.



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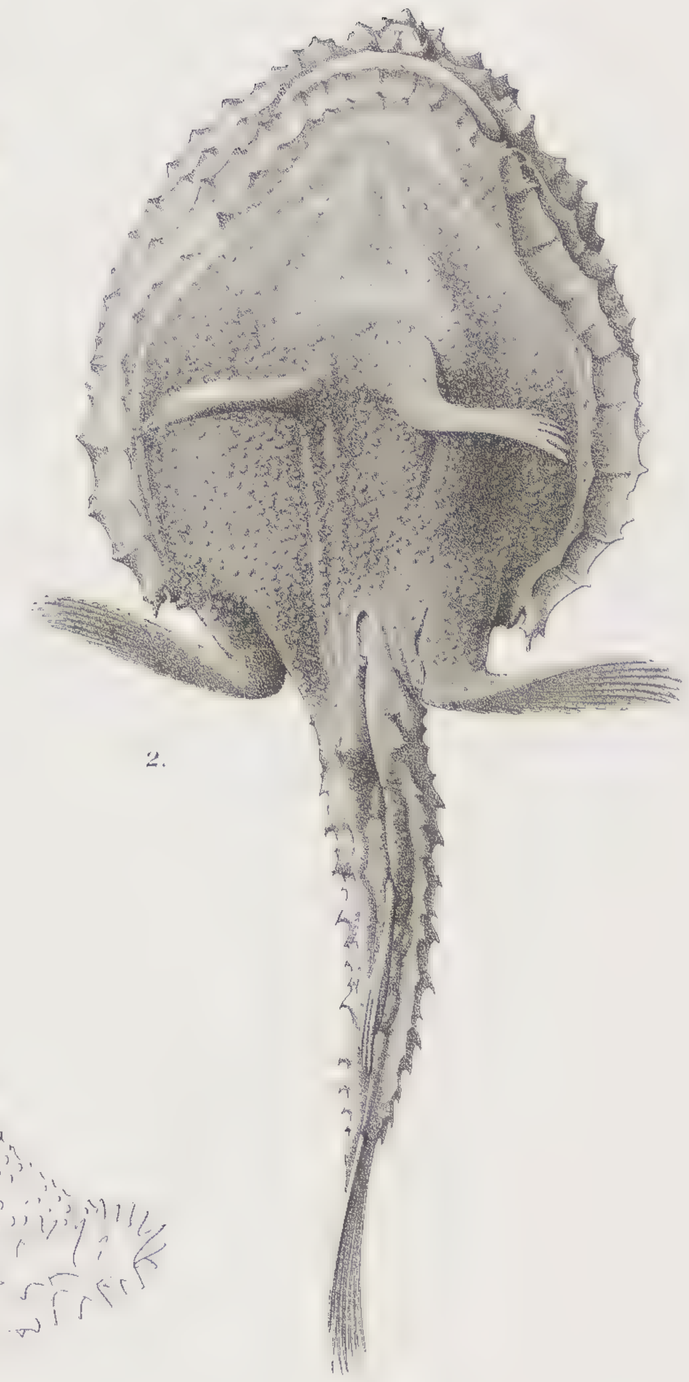


2.

4.

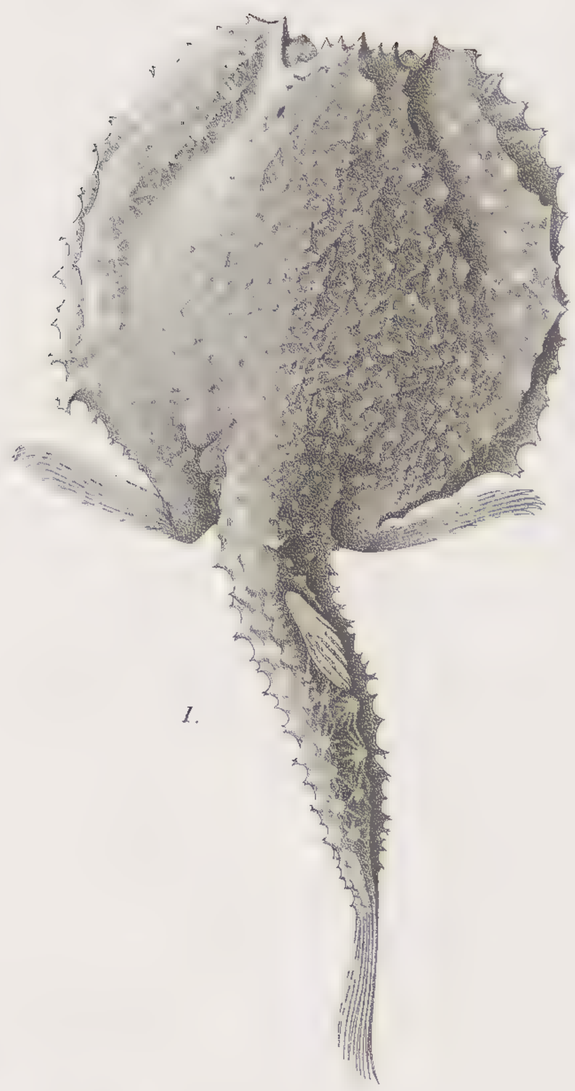
A.M.Westergren del

B.Mensel, lith

PLATE XXV.

HALIEUTOPSIS TUMIFRONS Garm. Page 90.

2.



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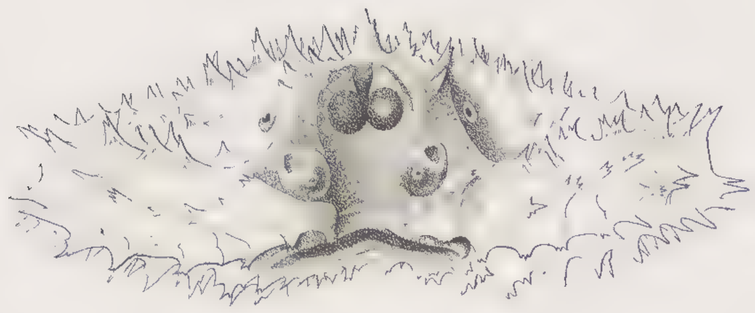

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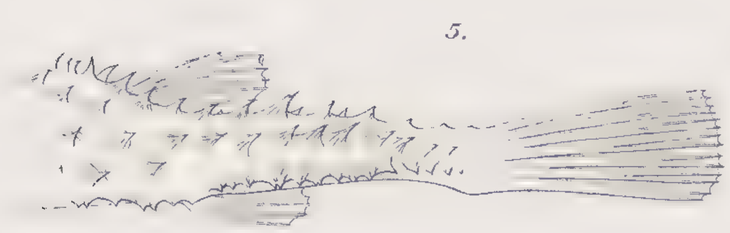


5.

PLATE XXVI.

MALTHOPSIS SPINULOSA Garm. Page 106.

Fig. 1. Dorsal view of the skeleton.

Fig. 2. Ventral aspect of the skeleton.

Fig. 3. Appearance of the skeleton from the side.

Fig. 4. Skull from below, showing the palatine, vomerine, and intermaxillary teeth.

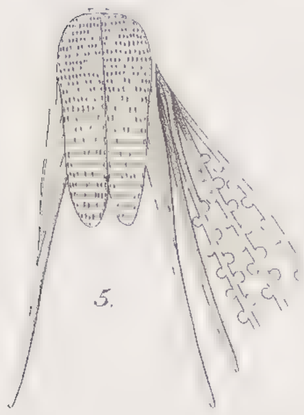
Fig. 5. Upper surface of the tongue, with teeth and ends of branchial arches.

Figs. 6–7. An upper tooth, from front and side, enlarged.

Figs. 8–9. A lower tooth, from front and side, enlarged.

2.

1.



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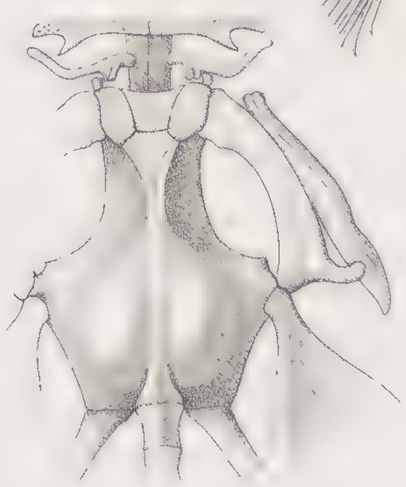

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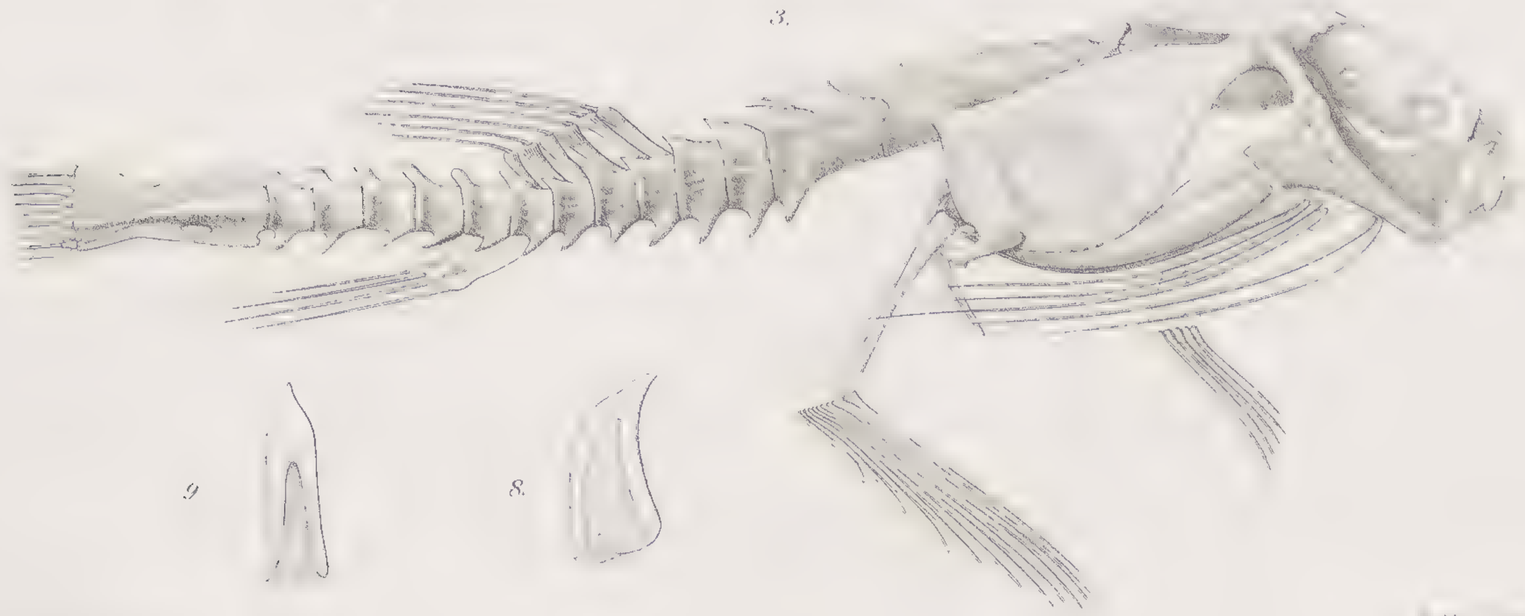
6.

7.



9.

8.

A M W. steeren del

PLATE XXVII.

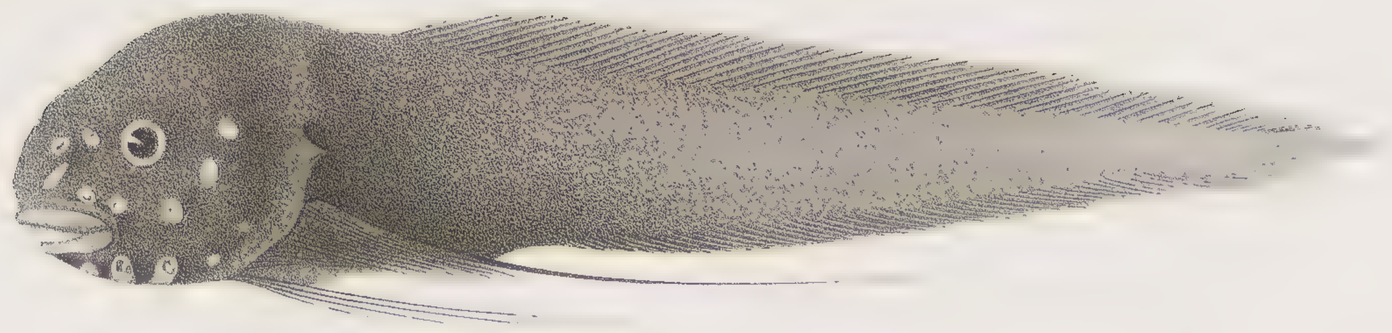
Fig. 1. Careproctus longifilis Garm. Page 115.

Fig. 2. Paraliparis latifrons Garm. Page 120.

Fig. 3. Paraliparis attenuatus Garm. Page 118.

Fig. 4. Paraliparis angustifrons Garm. Page 119.

1.



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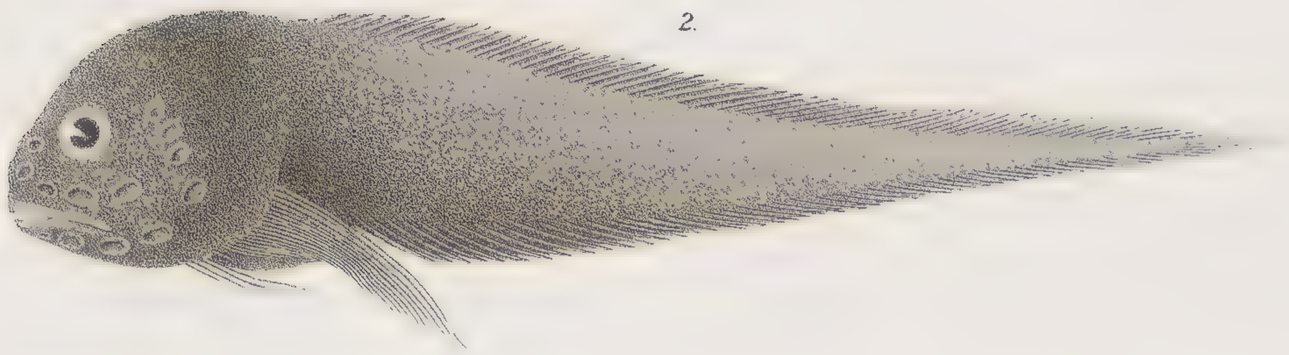

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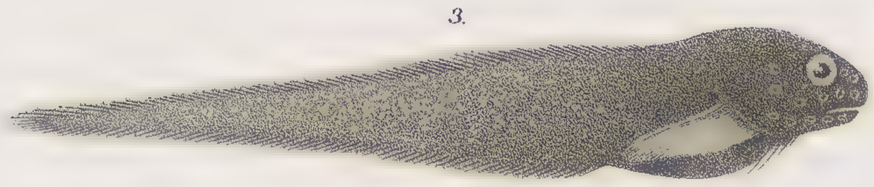

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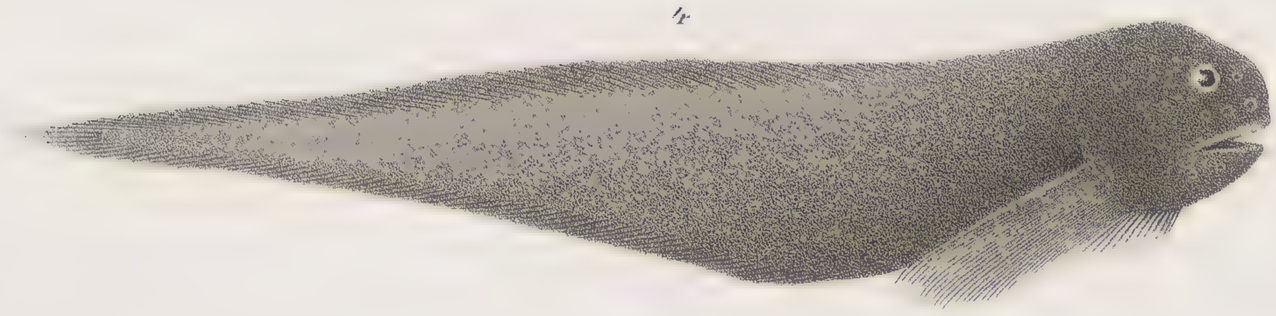


A.M Westergren, del. B Mansel, lith.

PLATE XXVIII.

Fig. 1. Careproctus longifilis Garm. Page 115.

Fig. 2. Paraliparis latifrons Garm. Page 120.

Fig. 2^a. Scapulary arch, with pectoral skeleton, and pelvic elements.

Figs. 2^b–2^f. Different views of the pelvis, from below, above, and the side.

Fig. 3. Paraliparis attenuatus Garm. Page 118.

Fig. 4. Paraliparis angustifrons Garm. Page 119.

A M Westergren del

B Meisel lith

PLATE XXIX.

Fig. 1. PARALIPARIS FIMBRIATUS Garm. Page 116.

Fig. 2. PARALIPARIS ATTENUATUS Garm. Page 118.

Fig. 3. PARALIPARIS ANGUSTIFRONS Garm. Page 119.

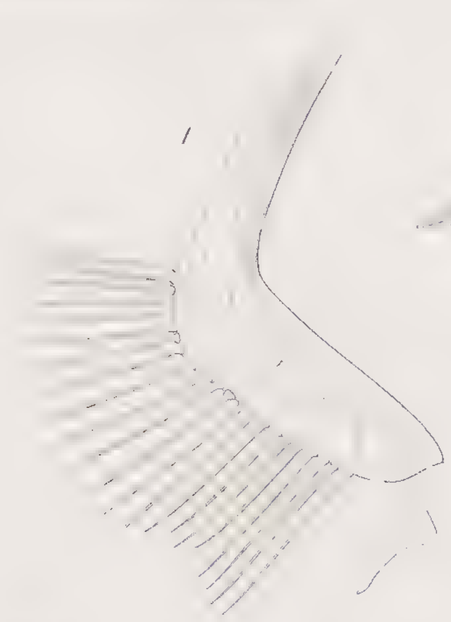
Fig. 4. PARALIPARIS GRANDICEPS Garm. Page 117.

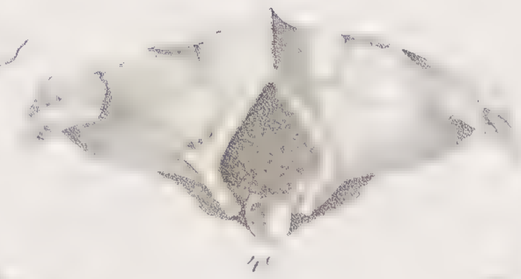
Figs. 4^a–4^c. Skull of *P. grandiceps*.

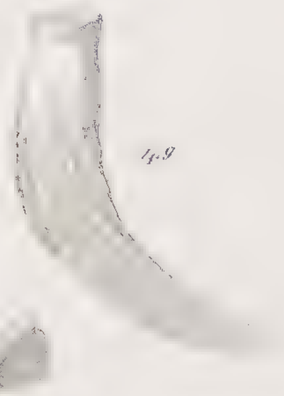
Fig. 4^d. Lower jaw of same.

Figs. 4^e–4^g. Intermaxillaries, maxillary, and operculum of same.

Fig. 5. CAREPROCTUS LONGIFILIS Garm. Page 115.







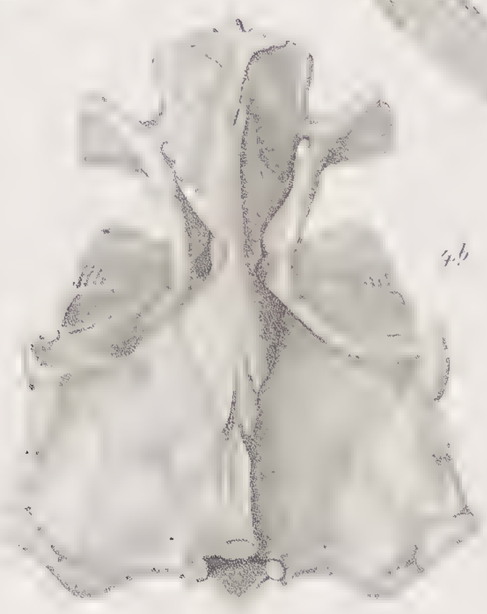


PLATE XXX.

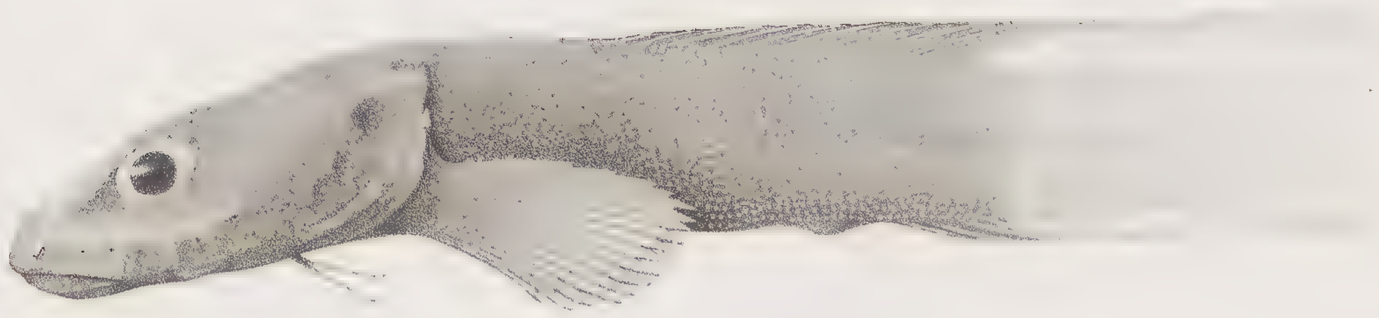
Fig. 1. Lycodes anguis Garm. Page 133.

Fig. 2. Lycodes incisus Garm. Page 135.

Fig. 3. Phucocœtes suspectus Garm. Page 137.

Fig. 4. *P. suspectus* as seen from below.

1



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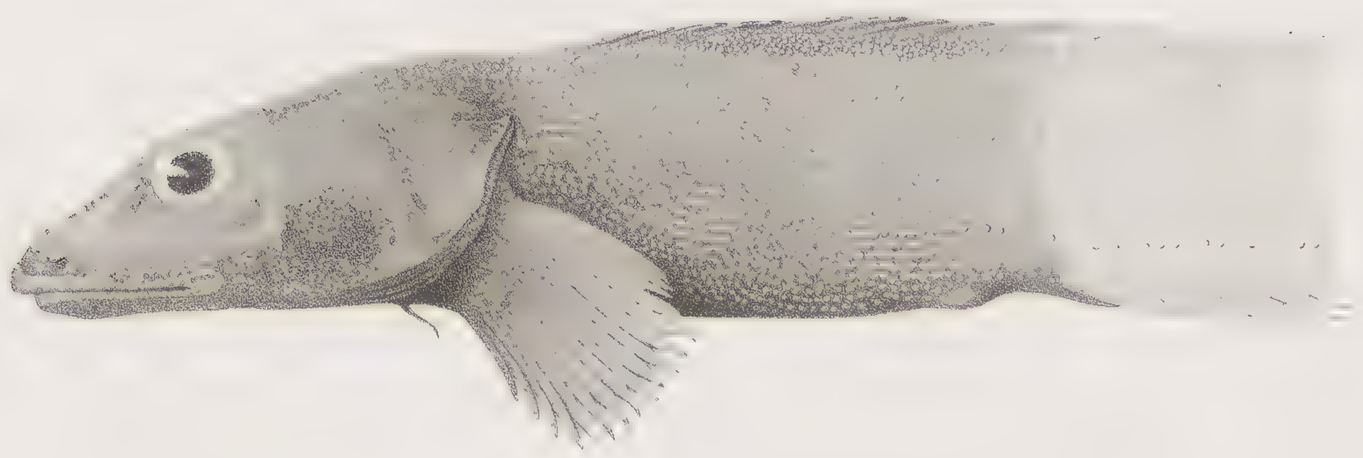

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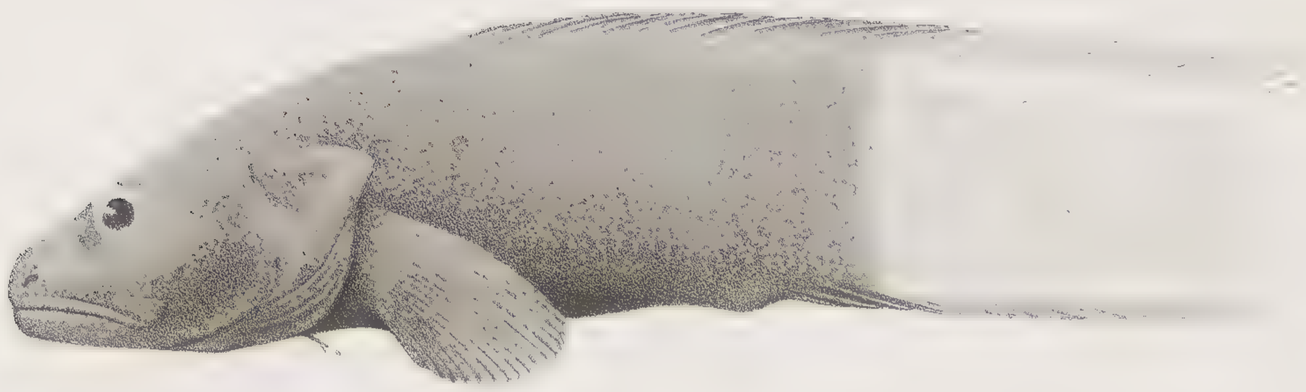


3a

A M Westergren de

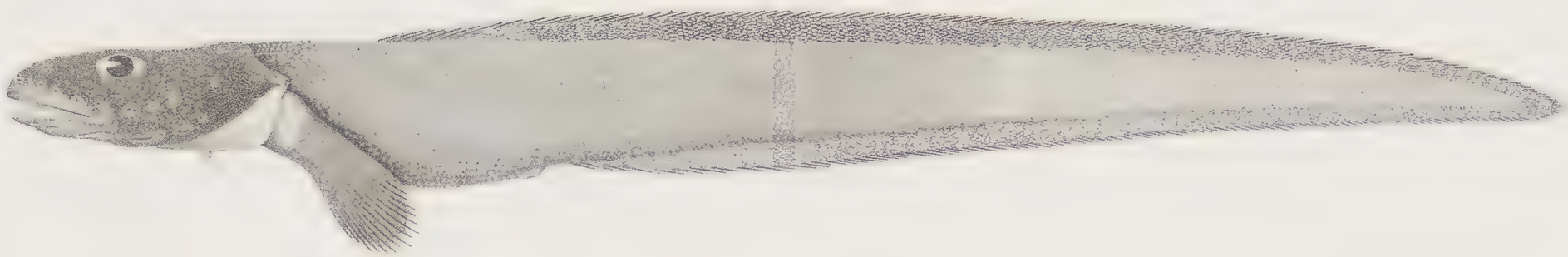
E Meise. ntl

PLATE XXXI.

Fig. 1. LYCODES CICATRIFER Garm. Page 136.

Fig. 2. GYMNELIS CONORHYNCHUS Garm. Page 131.

1.



2.

A. M. Westergren, del. B. Meisel, lith.

PLATE XXXII.

Fig. 1. LYCODOPSIS SCAURUS Garm. Page 132.

Fig. 2. BOTHROCAROPSIS ALALONGA Garm. Page 127.

1

2

A. M. Westergren del.

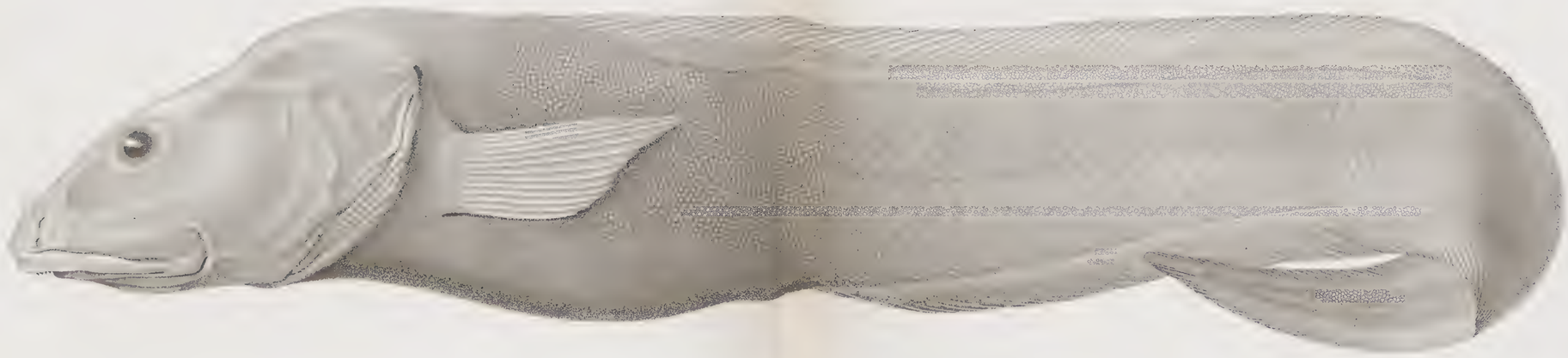
E. Me[illegible] lith.

PLATE XXXIII.

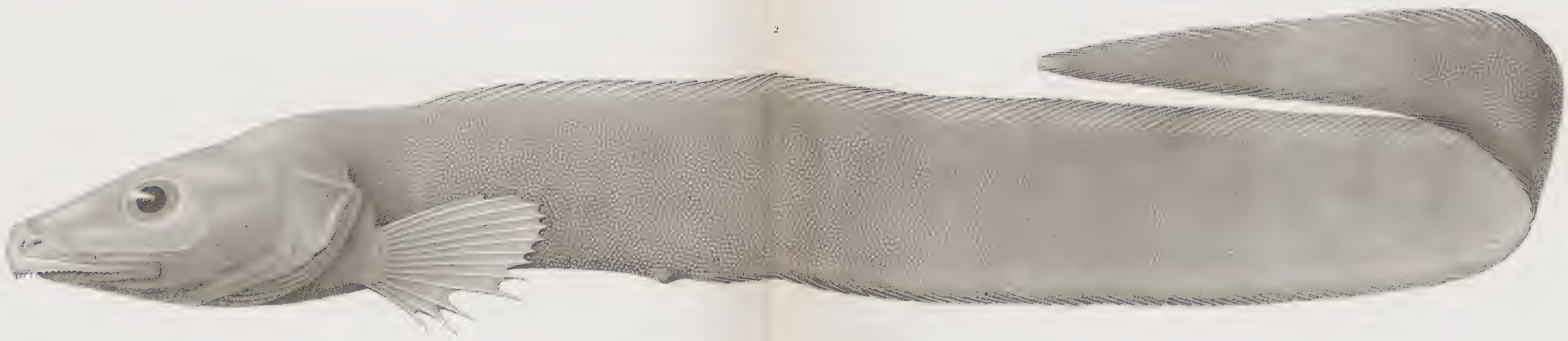
Fig. 1. BOTHROCAROPSIS RICTOLATA Garm. Page 128.

Fig. 2. BOTHROCAROPSIS ELONGATA Garm. Page 129.

1.



2



A M Westereren del

PLATE XXXIV.

LAMPROGRAMMUS ILLUSTRIS Garm. Page 174.

Fig. 1. Outlines of the head and shoulders, showing the Lateral Canal System.

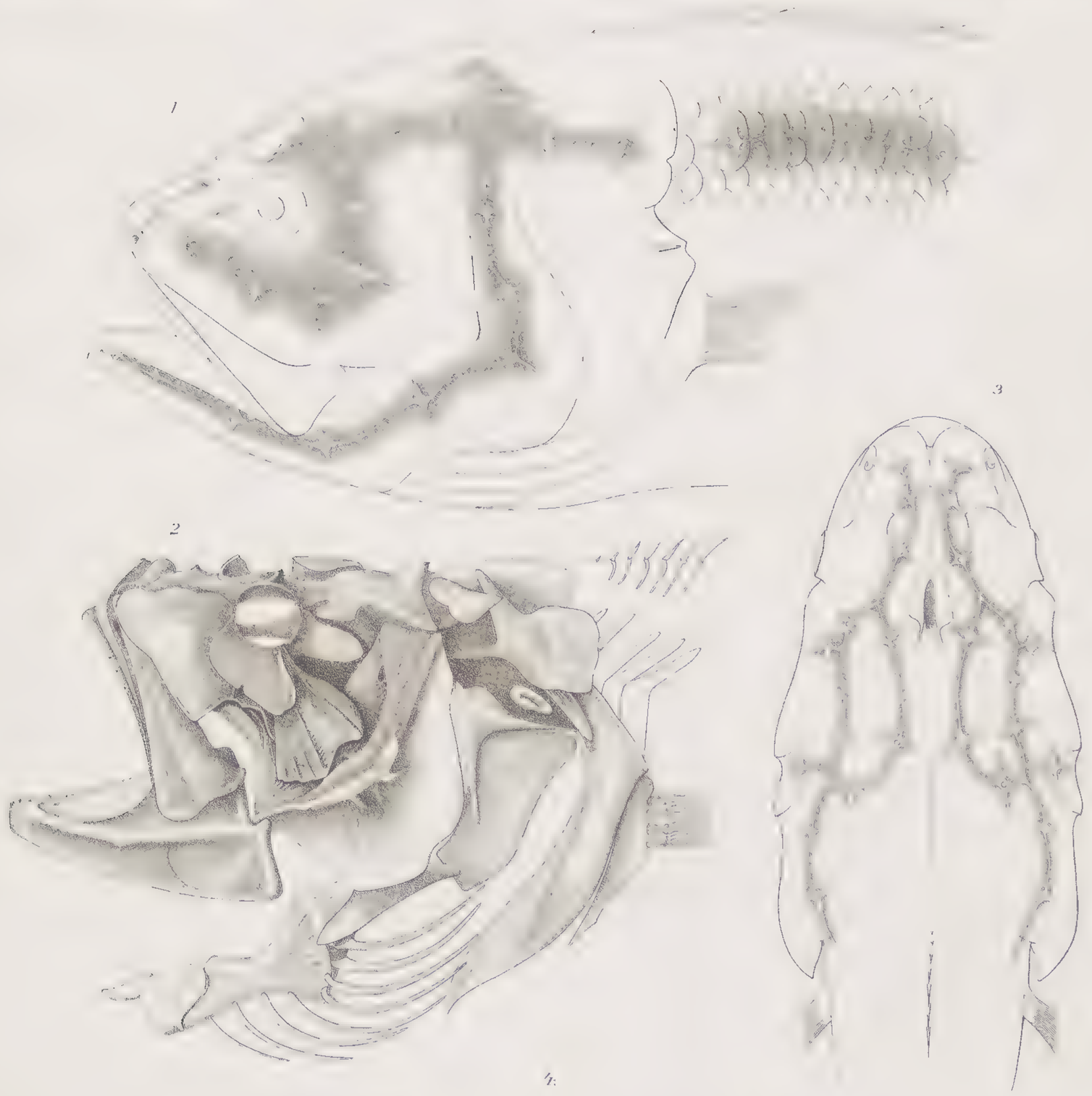
Fig. 2. Side view of the bones of the head and shoulders.

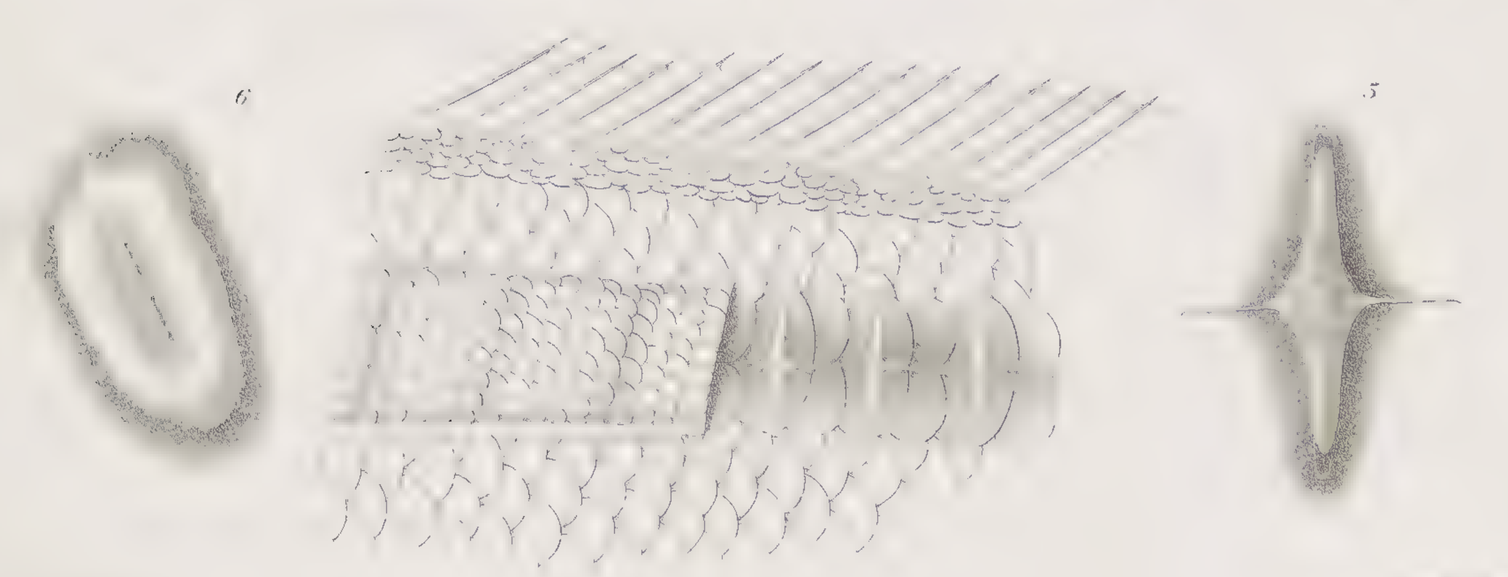
Fig. 3. Lateral Canal System as seen from above the head.

Fig. 4. Disks, scales, and coverings of the Lateral System on the flanks.

Fig. 5. Disk of the Lateral System, enlarged.

Fig. 6. Subopercular gland, enlarged, seen also in fig. 2.





A M Westergren, del

T. Moran, Sc.

PLATE XXXV.

ERETMICHTHYS PINNATUS Garm. Page 165.

Fig. 1. Appearance as seen from the left side.

Fig. 2. Bones of shoulder girdle and pectoral fin, outer view.

Fig. 3. Scapulary arch and pectoral bones, inner side, showing the different processes on the bases of the pectoral rays in the two parts of the fin for the vertical spread of the upper half and the longitudinal pull of the lower.

Fig. 4. One of the disks of the Lateral System, showing the distribution of the nervules.

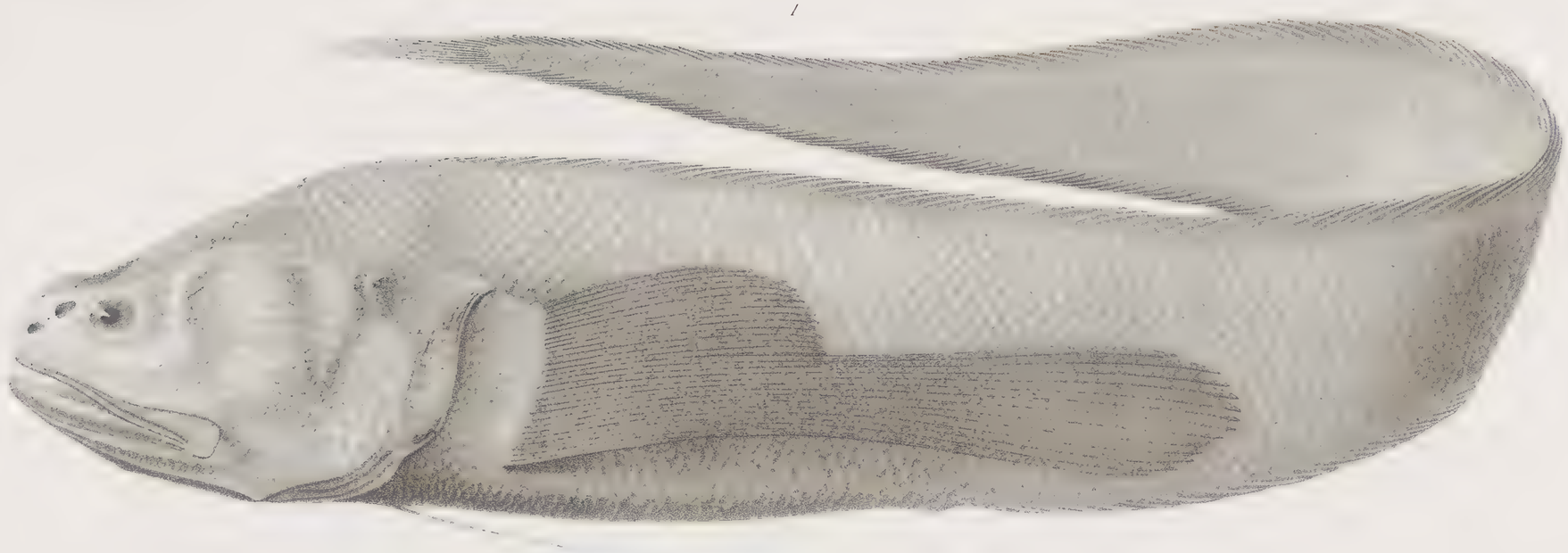


PLATE XXXVI.

Fig. 1. HOLCOMYCTERONUS DIGITTATUS Garm. Page 163.

Fig. 1[a]. Inner side of scapulary arch with pelvis of *H. digittatus*, showing processes for muscle attachments to pectoral rays.

Fig. 1[b]. Inner sides of the basal portions of a couple of the pectoral rays of the same.

Fig. 2. MIXONUS CAUDALIS Garm. Page 148.

Fig. 2[a]. Inner side of scapulary arch, pectorals, and pelvis, with ventral of *M. caudalis*.

2.

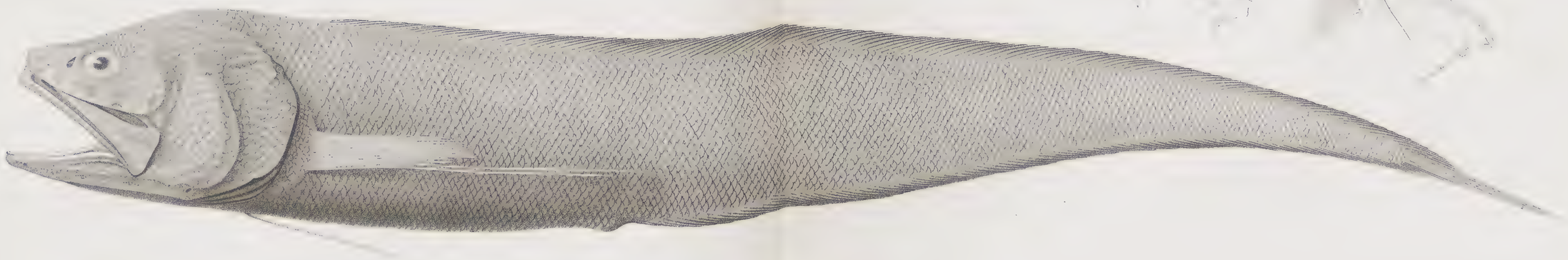


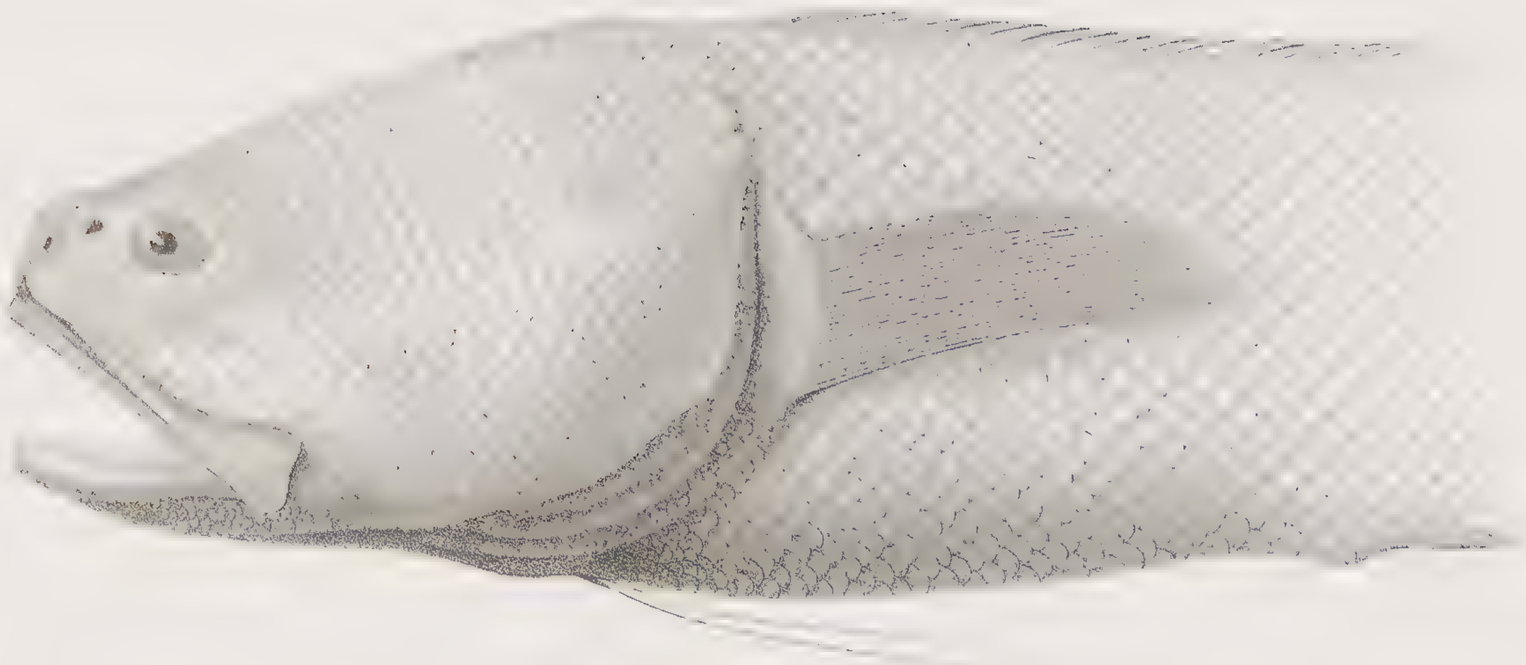
PLATE XXXVII.

Fig. 1. ERETMICHTHYS OCELLA Garm. Page 166.

Fig. 2. DICROLENE NIGRA Garm. Page 150.

Fig. 3. POROGADUS ATRIPECTUS Garm. Page 154.

1



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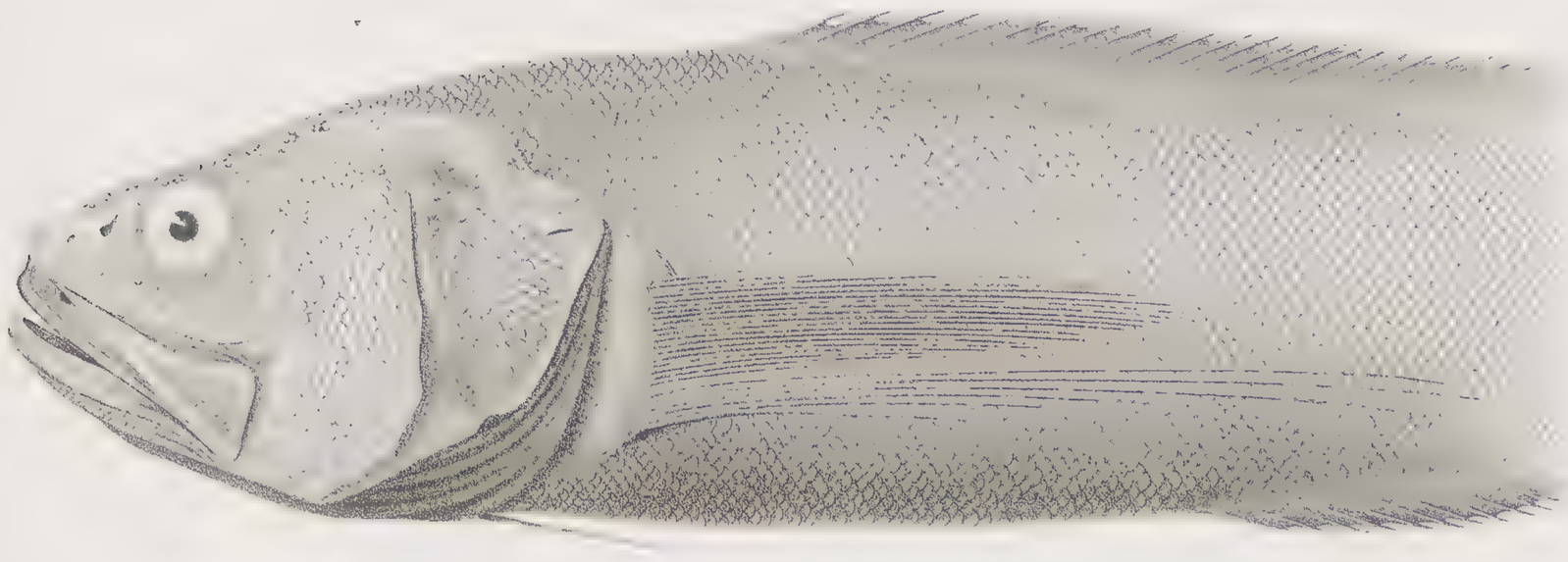
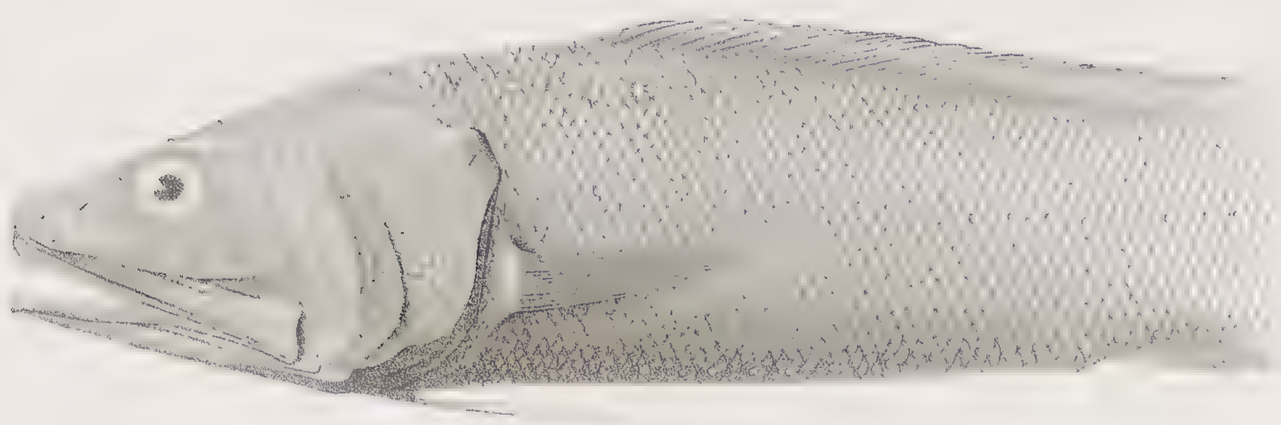


3.



A M W del. et lith.

B Meisel. lith

PLATE XXXVIII.

LEUCICORUS LUSCIOSUS Garm. Page 146.

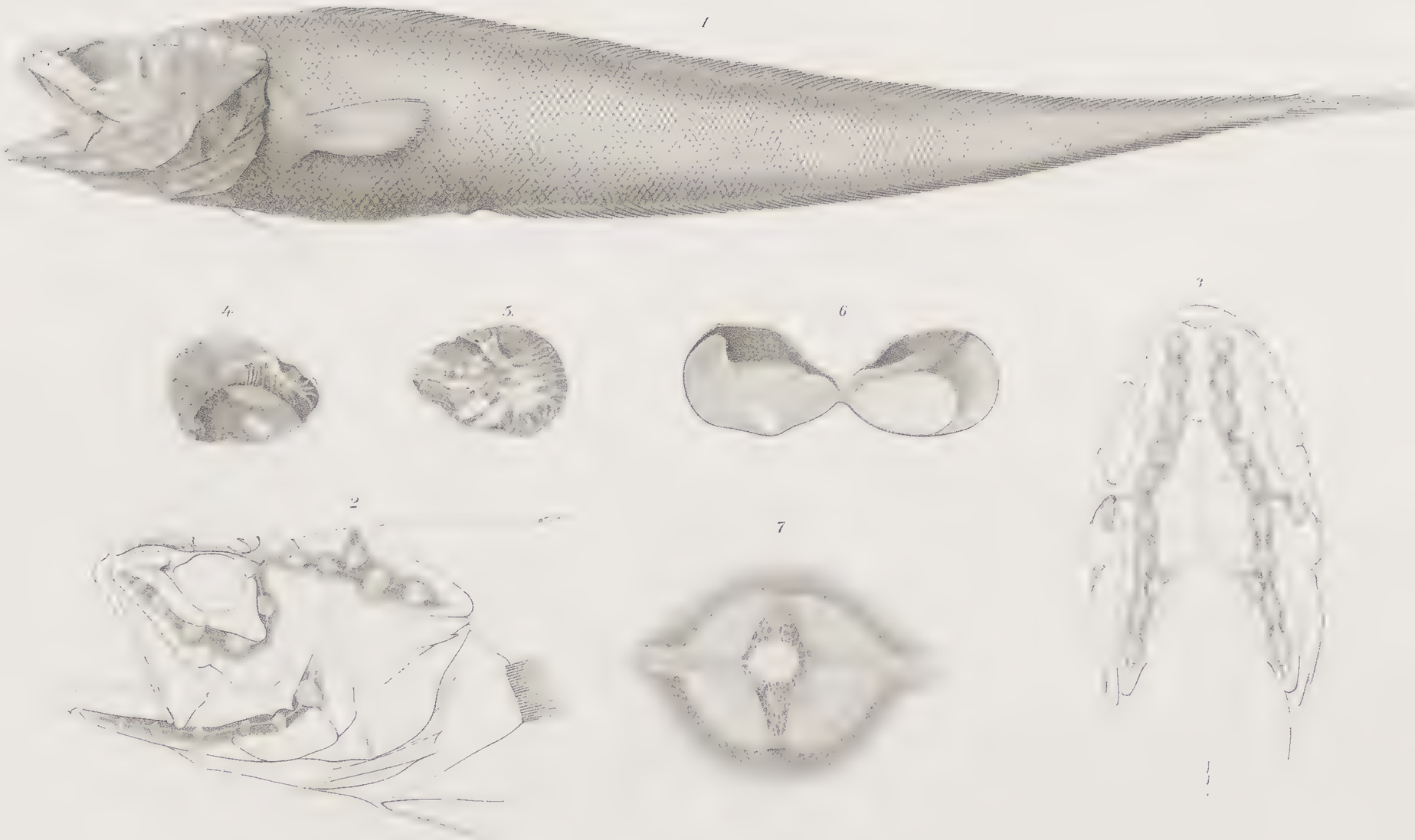
Fig. 1. Entire lateral aspect, from left side.

Fig. 2. Lateral System on the left side of the head.

Fig. 3. Lateral System as seen on the top of the head.

Figs. 4–6. The collapsed eyeball as on the outer and the inner side, and within after bisection.

Fig. 7. One of the disks of the Lateral System, from the cranial section of the canal.



A M Westerstein del

B Meisel lith

PLATE XXXIX.

Fig. 1. PSEUDONUS ACUTUS Garm. Page 169.

Fig. 2. MIXONUS CAUDALIS Garm. Page 148.

Disks of the Lateral System with nerves and connections.

Fig. 3. CATÆTYX SIMUS Garm. Page 168.

Viscera from the right side.

Fig. 4. Genital cage, papilla, etc. of *C. simus*, from below, from the side, and from above.

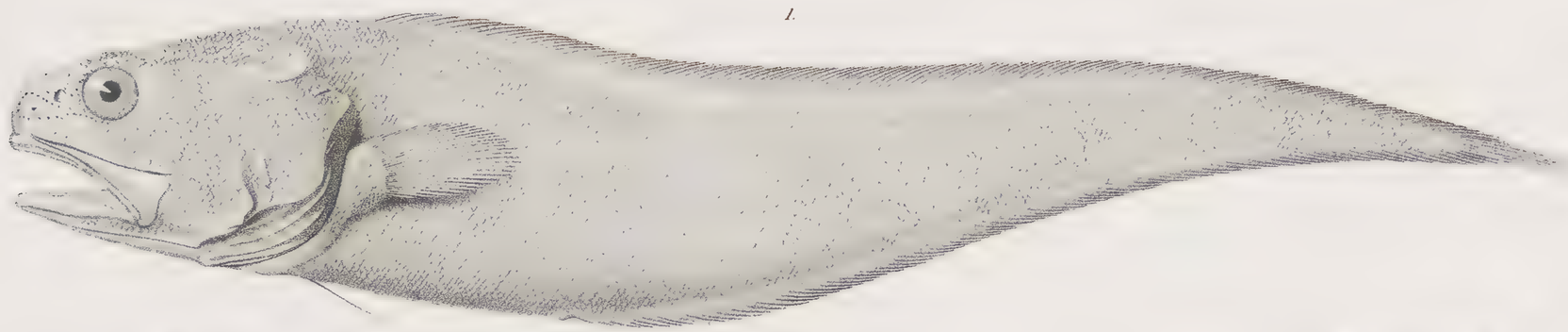
Fig. 5. Corresponding views of the Genital cage, etc. of *Barathronus bicolor* G. B.

A M Westergren del B Meisel lith.

PLATE XL.

Figs. 1–1^b. MONOMITOPUS TORVUS Garm. Page 157.

Figs. 2–2^b. MONOMEROPUS MALISPINOSUS Garm. Page 158.



A.M Westergren, del. B. Meisel lith.

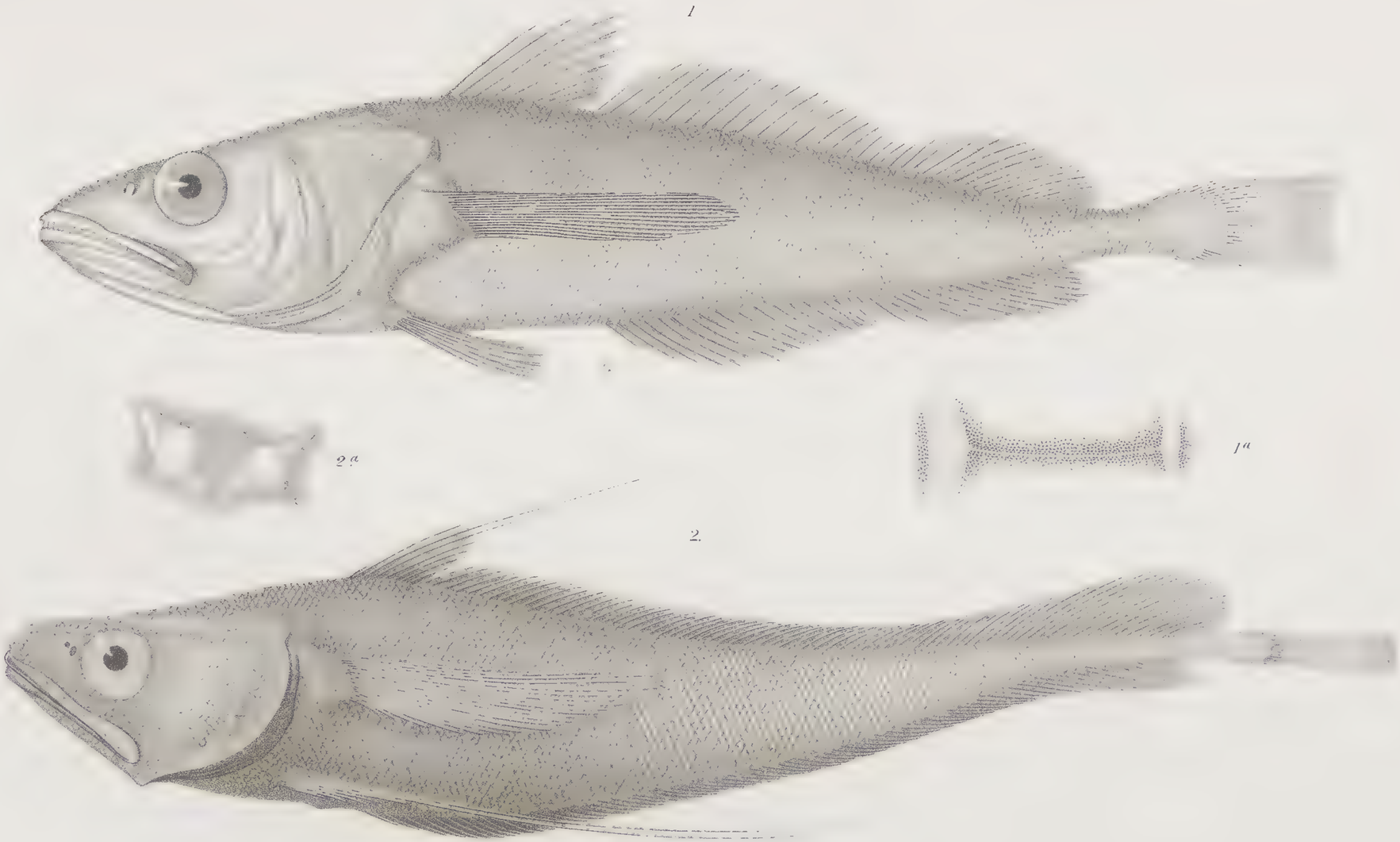
PLATE XLI.

Fig. 1. MERLUCCIUS ANGUSTIMANUS Garm. Page 183.

Fig. 1ª. Disks of the Lateral System from the head of *M. angustimanus.*

Fig. 2. LEPTOPHYCIS FILIFER Garm. Page 182.

Fig. 2ª. Disks and connecting thread, of Lat. Syst., from head of *L. filifer.*

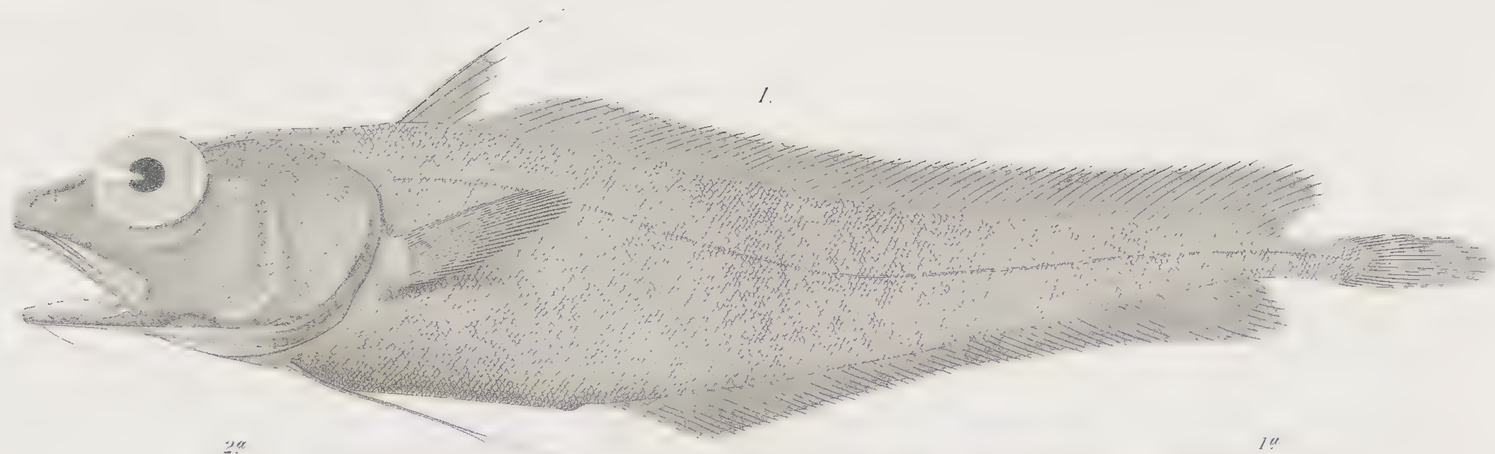


A M Westergren, del

PLATE XLII.

Figs. 1–1ª. Læmonema gracillipes Garm. Page 187.

Figs. 2–2ª. Phyciculus longipes Garm. Page 188.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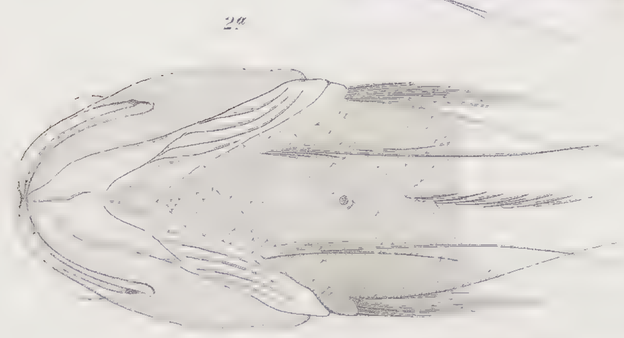
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1a

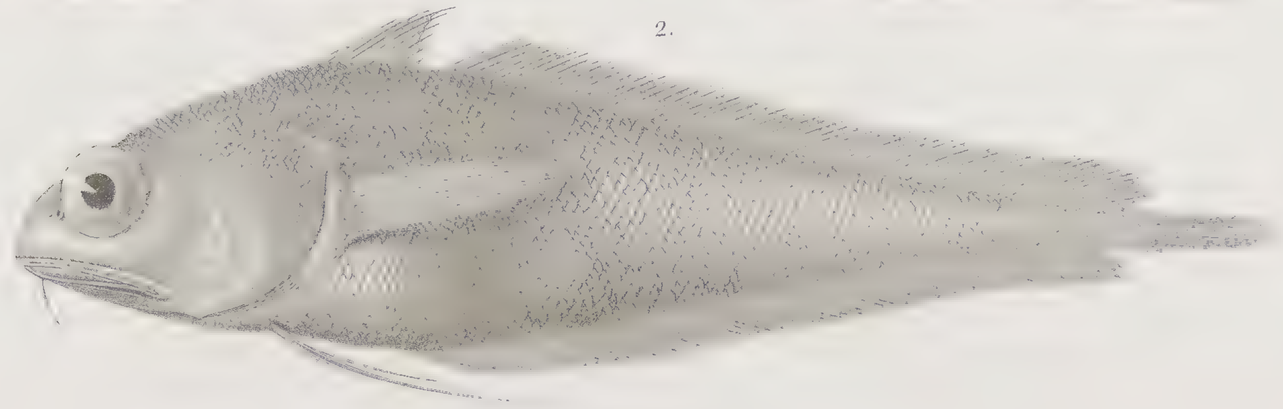
2.

PLATE XLIII.

Figs. 1–3. MICROLEPIDIUM GRANDICEPS Garm. Page 181.

Figs. 4–5. Viscera of *M. grandiceps* from the right and from the left side.

Figs. 6–7. BREGMACEROS LONGIPES Garm. Page 191.

Figs. 8–9. Stomach and intestine of *B. longipes*, with pyloric cæca.

A M Westergren, del

PLATE XLIV.

Figs. 1–1^{b}. MACRURUS BULBICEPS Garm. Page 194.

Figs. 2–2^{b}. MACRURUS BUCEPHALUS Garm. Page 195.

J. Henry Blake del.

B. Mes[illegible] lith.

PLATE XLV.

Figs. 1–1^{b}. Macrurus liraticeps Garm. Page 196.

Figs. 2–2^{b}. Macrurus barbiger Garm. Page 197.

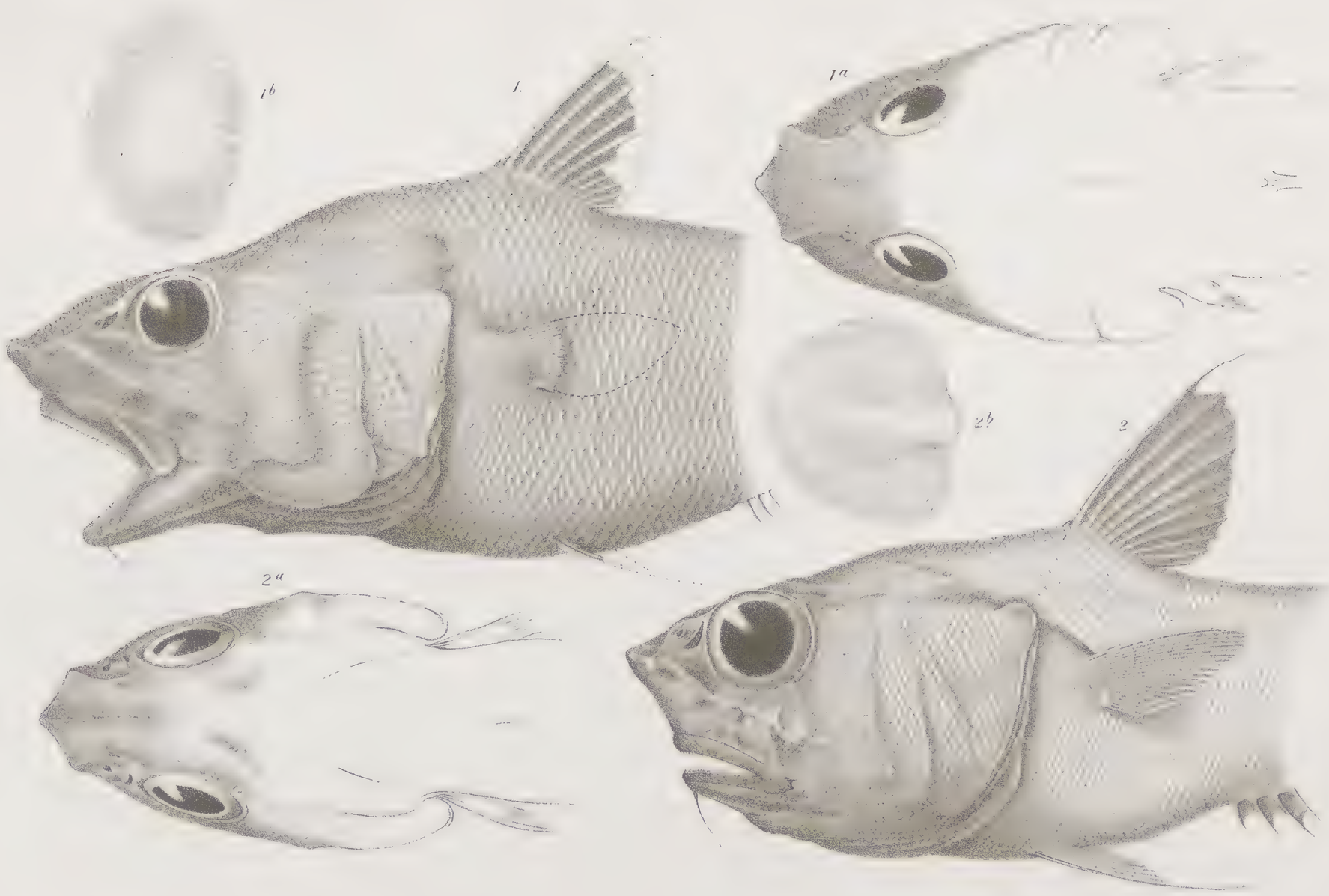
1b
1
1a
2b
2
2a

PLATE XLVI.

Figs. 1–1^{b}. MACRURUS FRAGILIS Garm. Page 203.

Figs. 2–2^{b}. MACRURUS CARMINIFER Garm. Page 204.

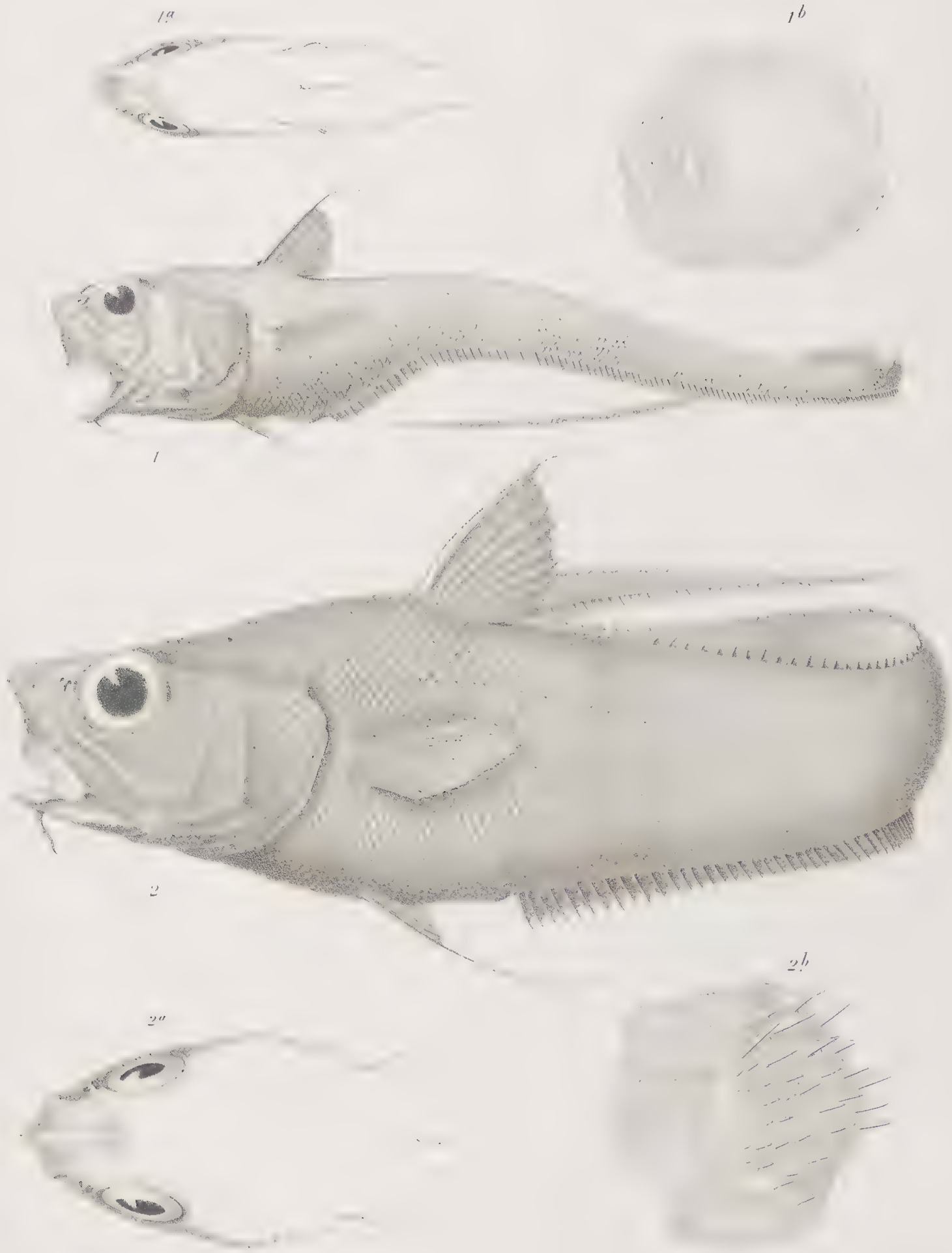
1a
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PLATE XLVII.

Figs. 1–1^{b}. MACRURUS ORBITALIS Garm. Page 207.

Figs. 2–2^{b}. MACRURUS LORICATUS Garm. Page 208.

A.M. Westergren, del.

B. Meisel lith.

PLATE XLVIII.

Figs. 1–1^{b}. MACRURUS CONVERGENS Garm. Page 210.

Figs. 2–2^{b}. MACRURUS LATIROSTRATUS Garm. Page 211.

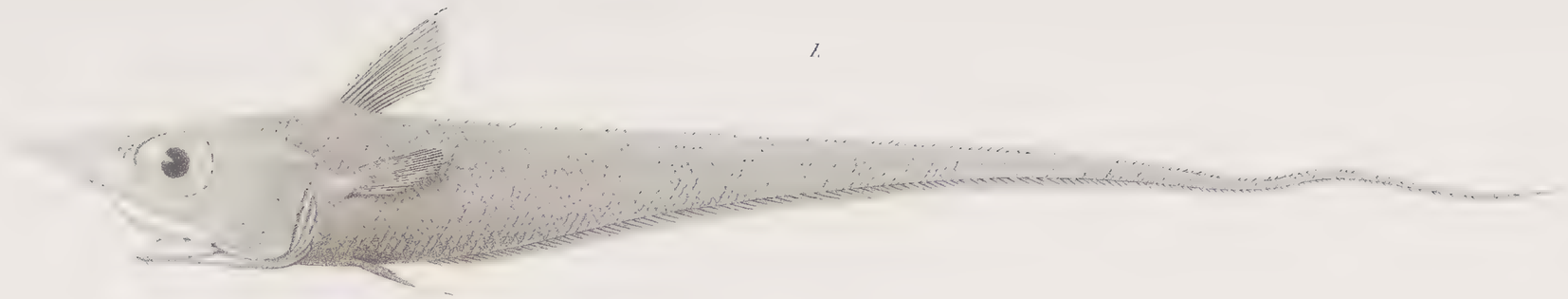
B. Meisel lith.

PLATE XLIX.

Figs. 1–1^{b}. MACRURUS TENUICAUDA Garm. Page 216.

Figs. 2–2^{b}. MACRURUS CANUS Garm. Page 217.

1



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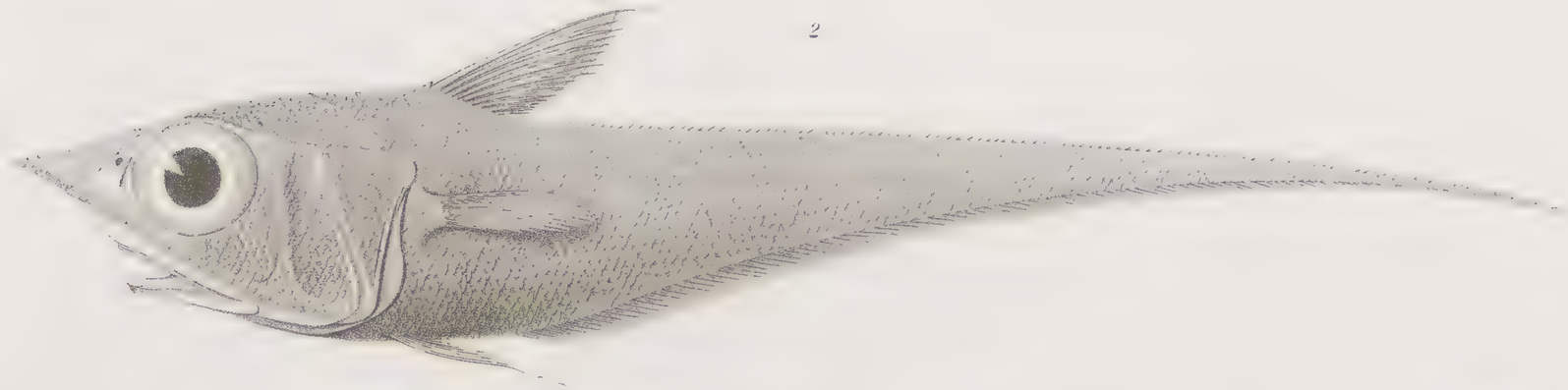

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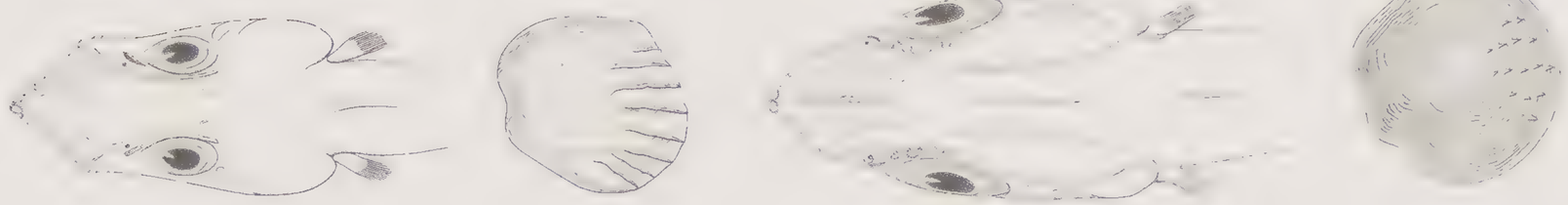
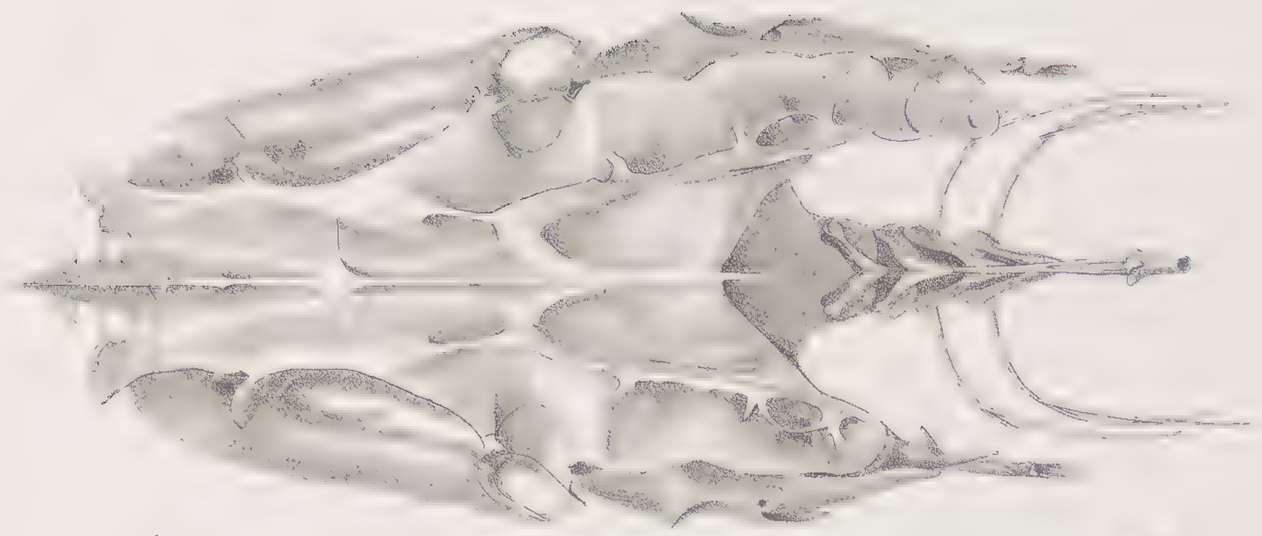


A.M. Westergren, del

B. Meisel Lith

PLATE L.

MACRURUS ANGULICEPS Garm. Page 212.



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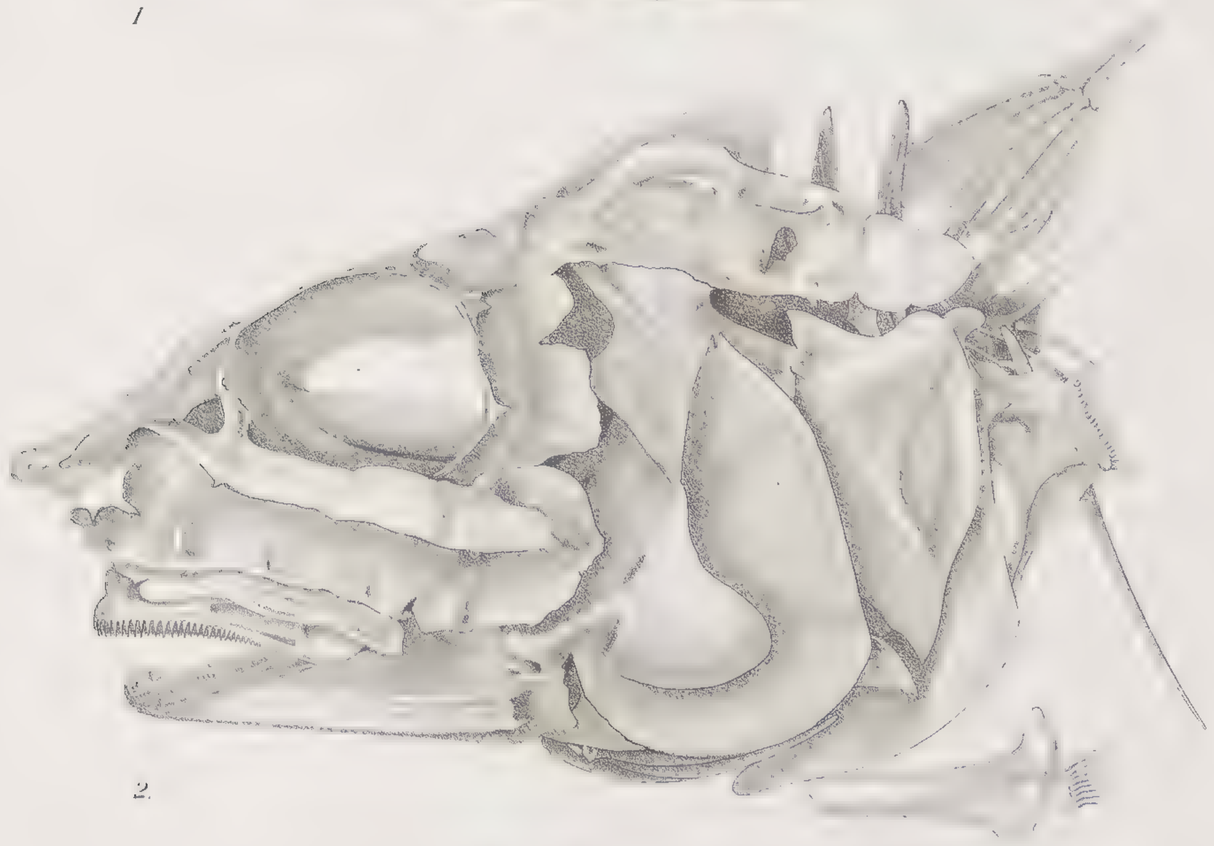

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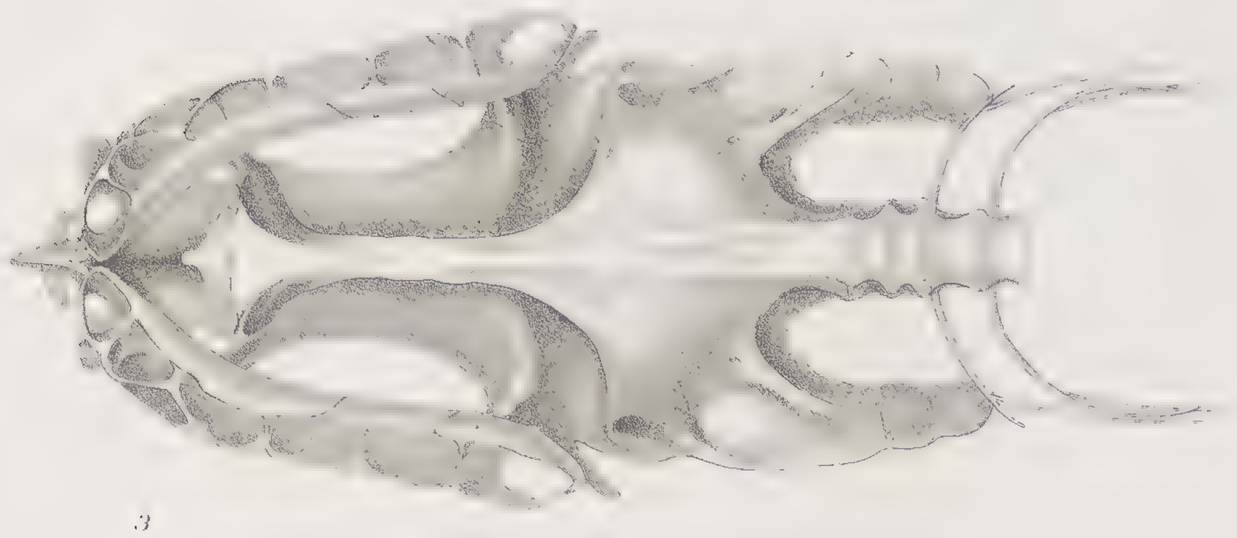

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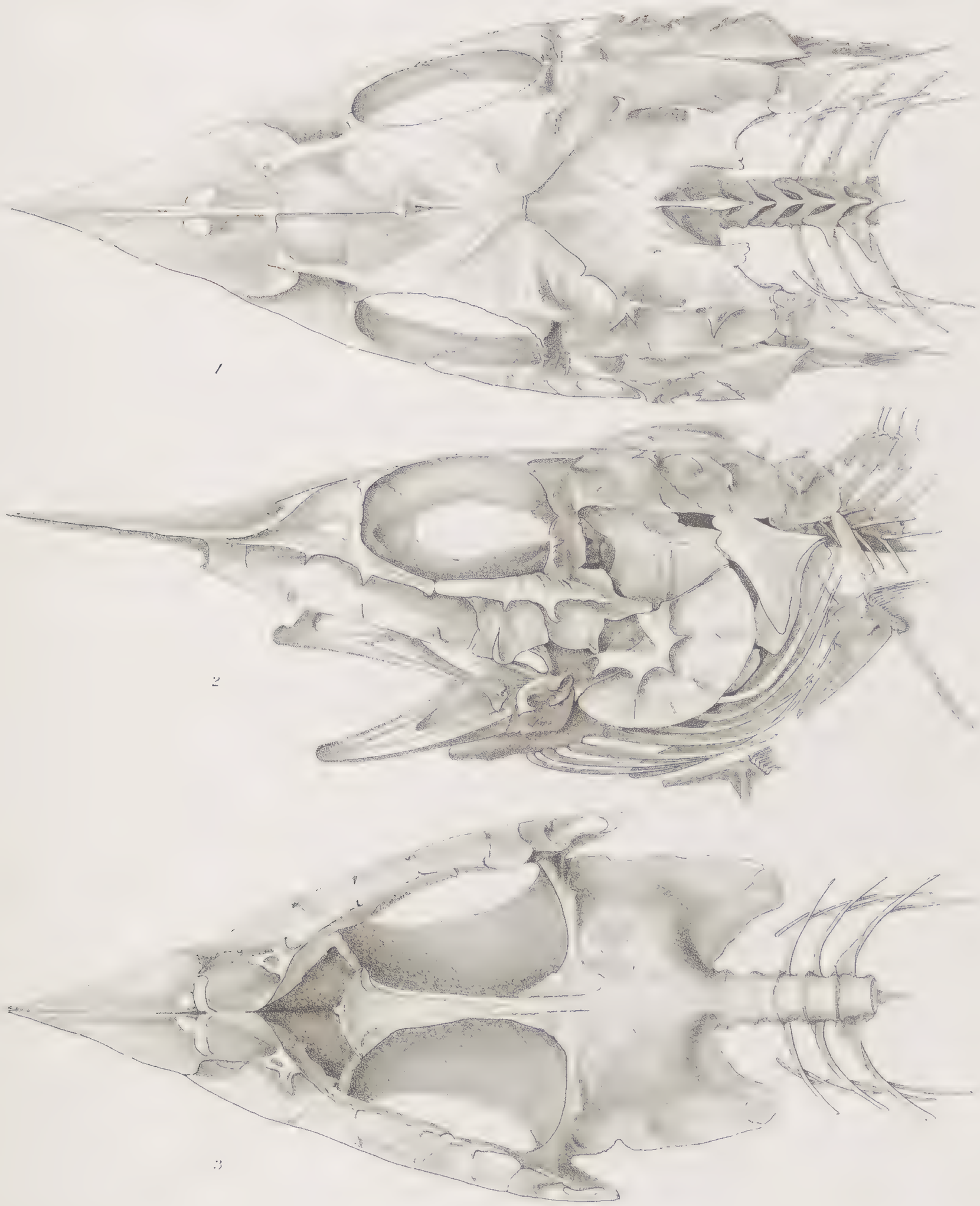
J. Henry Blake, del

B Meisel lith.

PLATE LI.

TRACHYRHYNCHUS HELOLEPIS Gilb. Page 218.



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J Henry Blake, del

B. Meisel lith

PLATE LII.

Figs. 1–2. MONOLENE MACULIPINNA Garm. Page 226.

Fig. 3. SYMPHURUS MICROLEPIS Garm. Page 230.

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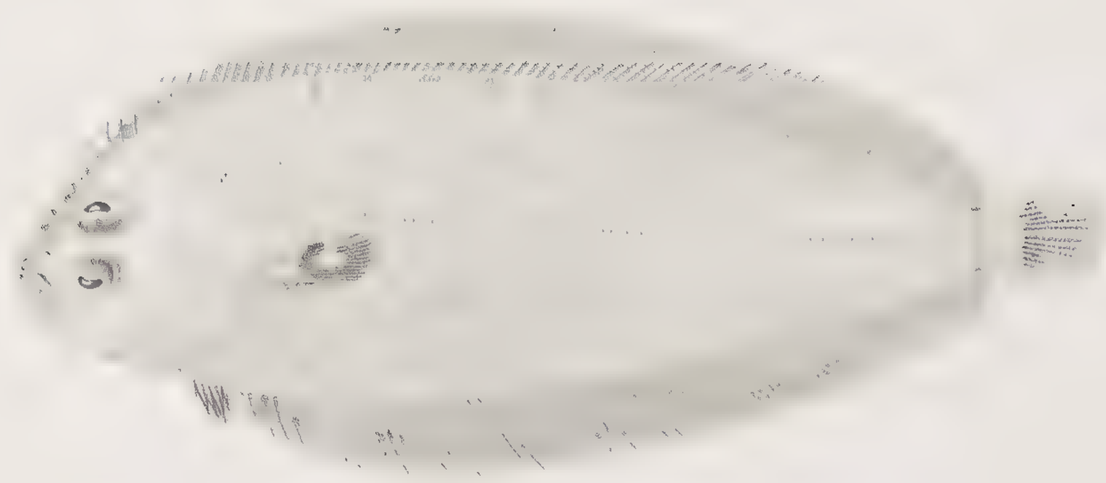

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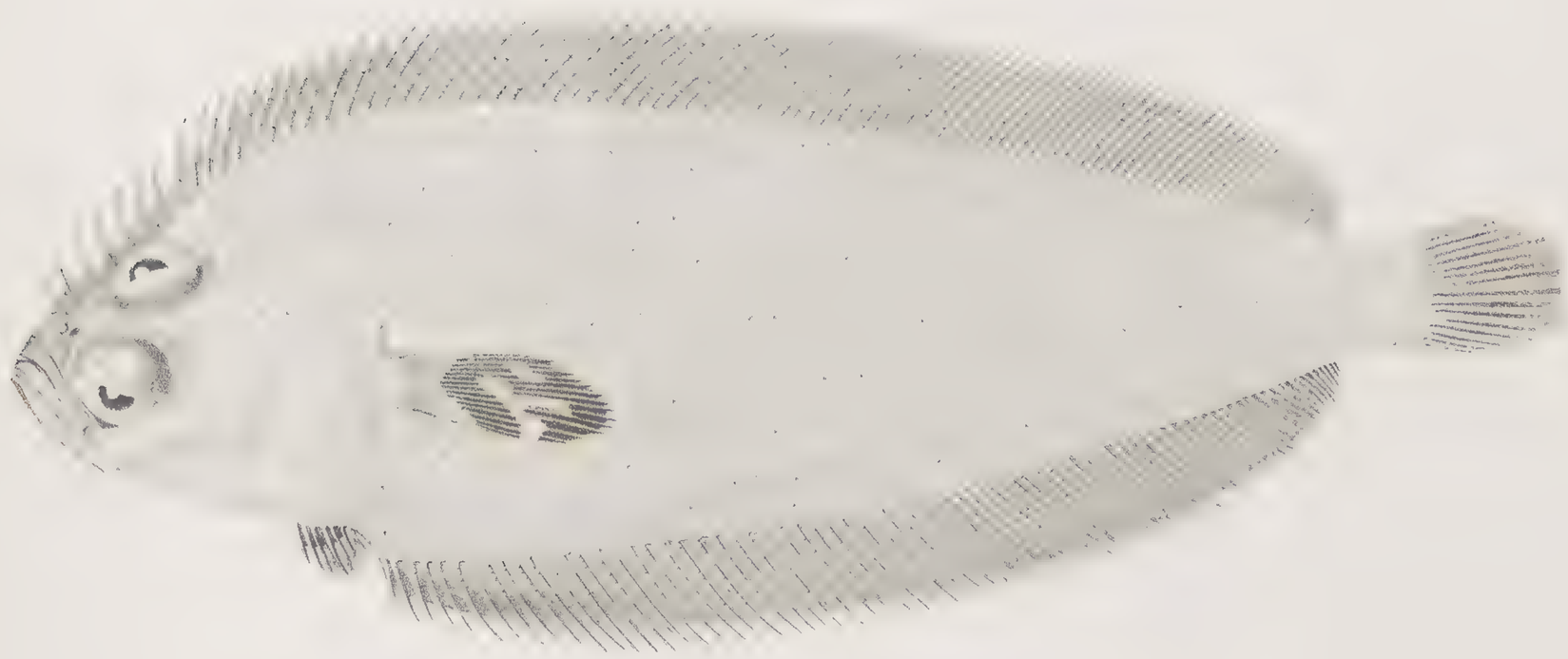

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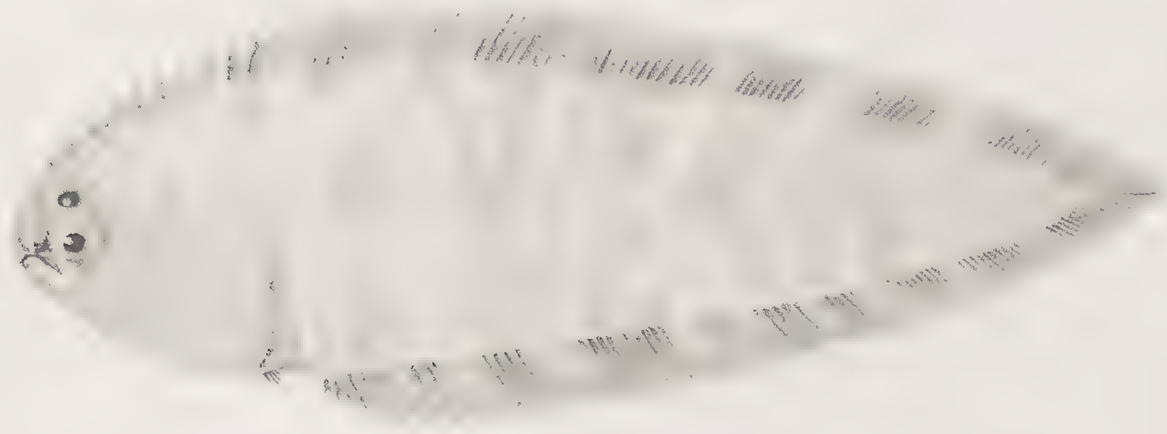

PLATE LIII.

Fig. 1. STERNOPTYX OBSCURA Garm. Page 232.

Fig. 2. VALENCIENNELLUS STELLATUS Garm. Page 239.

Fig. 3. MAUROLICUS OCULATUS Garm. Page 241.

Figs. 4–4ª. LYCHNOPOLES ARGENTEOLUS Garm. Page 244.

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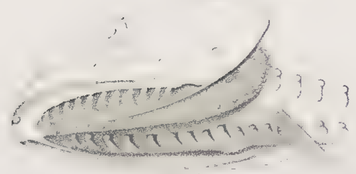

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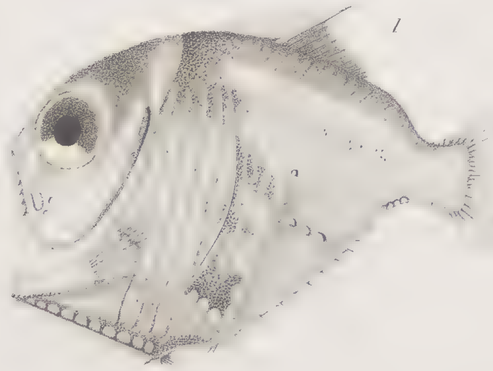

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A.M. Worthington del

PLATE LIV.

Figs. 1–1^{e}. CHLOROPHTHALMUS MENTO Garm. Page 253.

Figs. 2–2^{d}. SCOPELENGYS DISPAR Garm. Page 254.

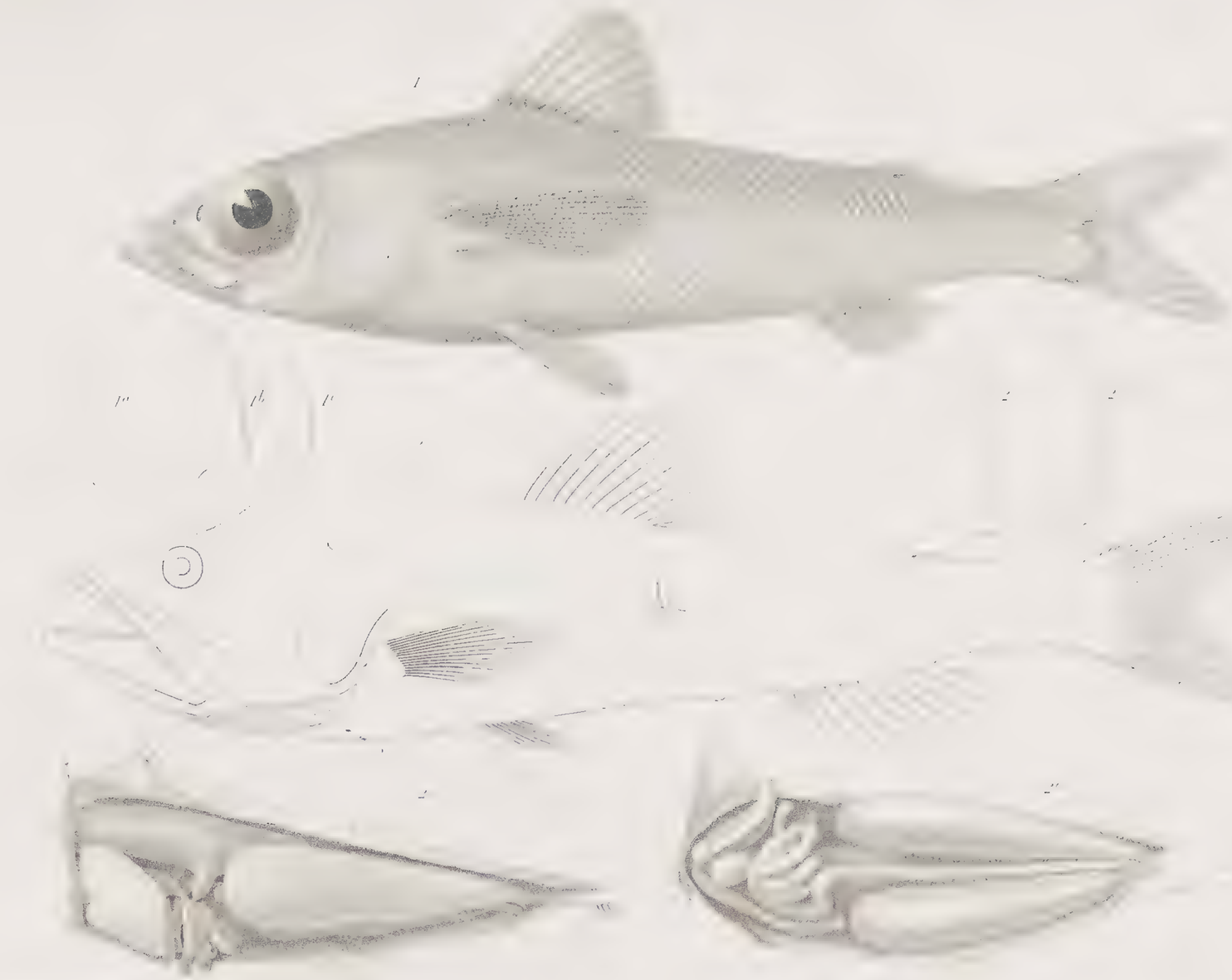

PLATE LV.

Fig. 1. Bathypteroïs ventralis Garm. Page 256.

Fig. 2. Myctophum luminosum Garm. Page 263.

Fig. 3. Myctophum aurolaternatum Garm. Page 264.

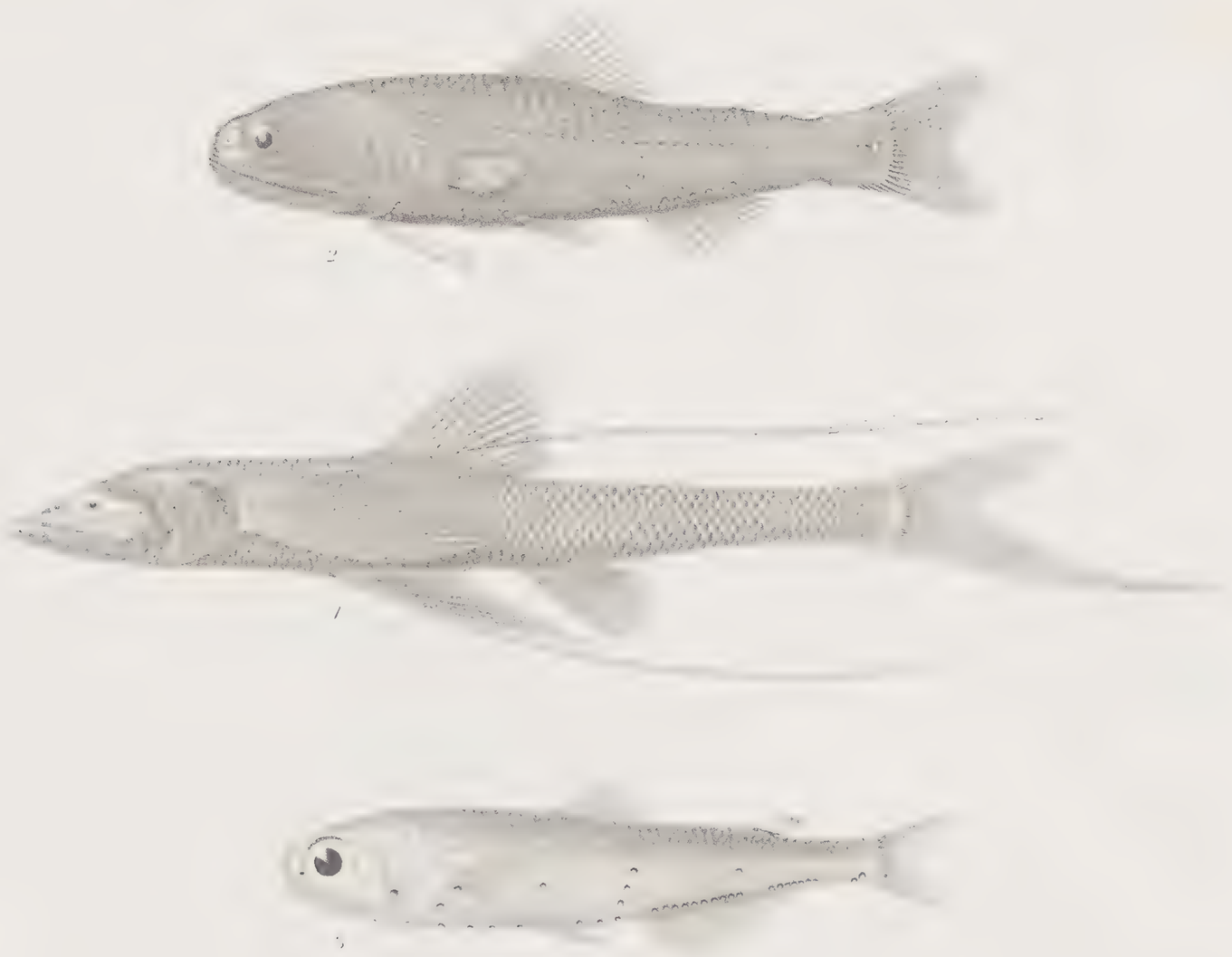

PLATE LVI.

Fig. 1. MYCTOPHUM LATERNATUM Garm. Page 267.

Fig. 2. MYCTOPHUM OCULEUM Garm. Page 260.

Fig. 3. MYCTOPHUM NITIDULUM Garm. Page 266.

Fig. 4. STOMIAS ATRIVENTER Garm. Page 277.

Fig. 5. STOMIAS HEXAGONATUS Garm. Page 276.

Fig. 6. DACTYLOSTOMIAS FILIFER Garm. Page 279.

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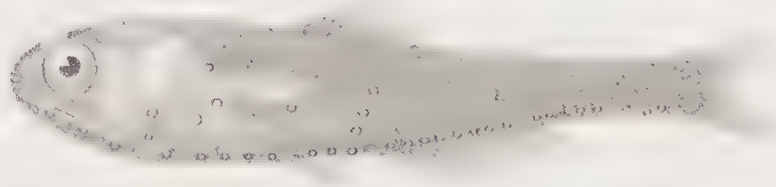

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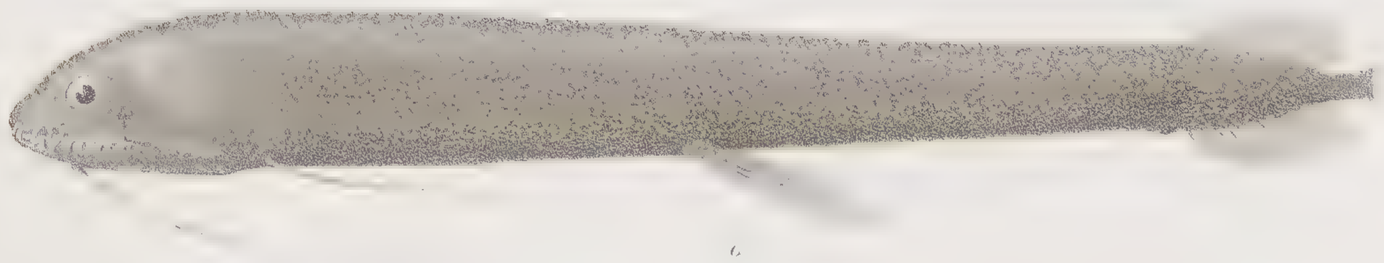

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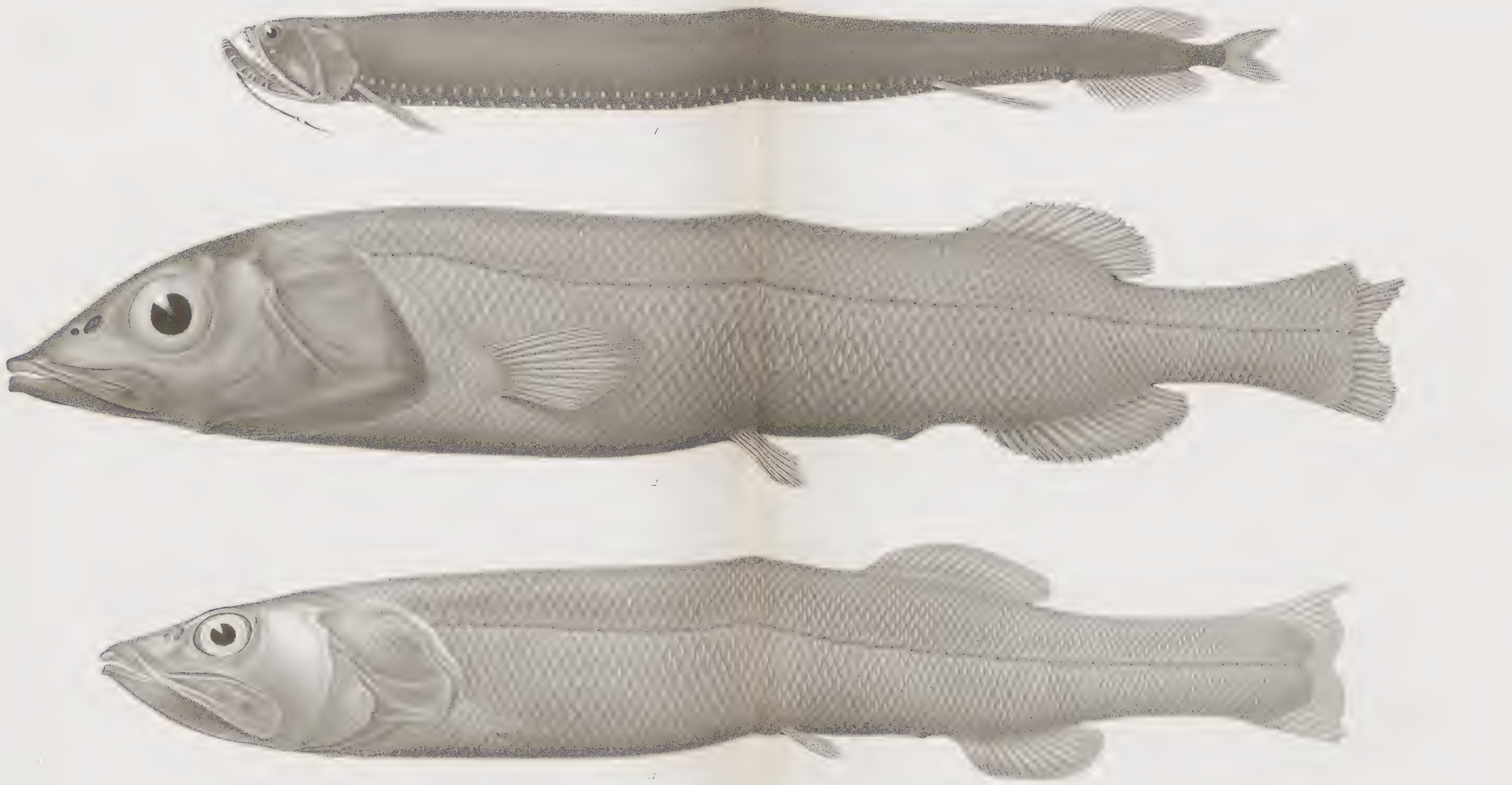
PLATE LVII.

Fig. 1. Stomias colubrinus Garm. Page 275.

Fig. 2. Alepocephalus fundulus Garm. Page 293.

Fig. 3. Narcetes pluriserialis Garm. Page 289.



J Henry Blake, del

B Mensel lith

PLATE LVIII.

Fig. 1. BATHYTROCTES ALVEATUS Garm. Page 287.

Fig. 2. BATHYTROCTES ALVIFRONS Garm. Page 286.

Fig. 3. LEPTOCHILICHTHYS AGASSIZII Garm. Page 285.

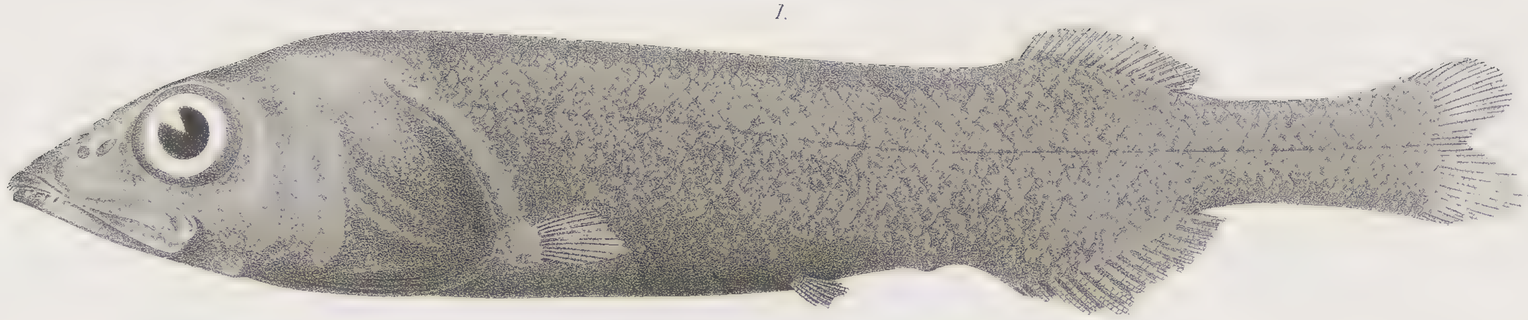
J. Henry Blake del.

PLATE LIX.

Fig. 1. ALEPOCEPHALUS ASPERIFRONS Garm. Page 291.

Fig. 2. ALEPOCEPHALUS CONVEXIFRONS Garm. Page 292.

1.



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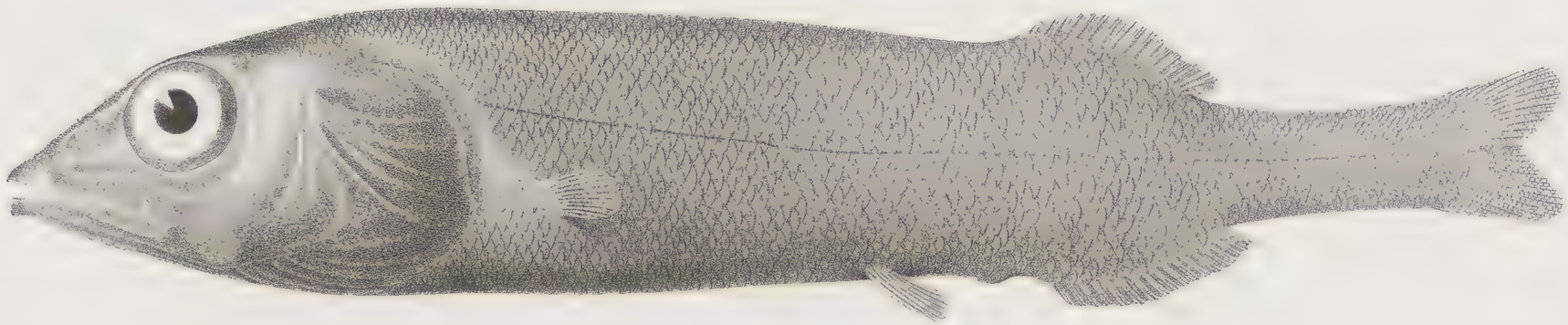


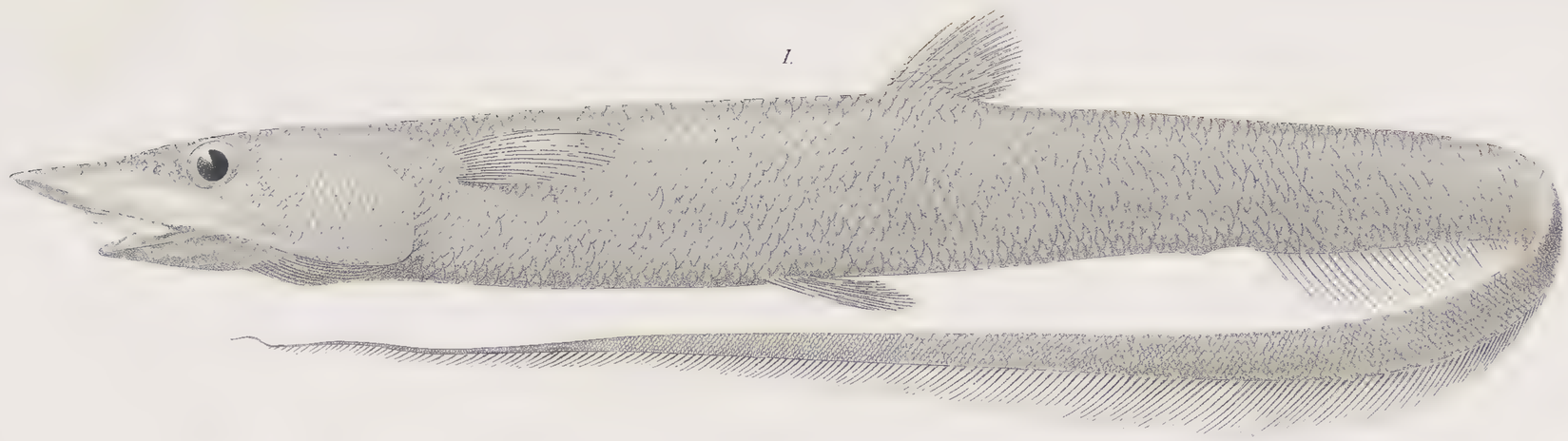
J Henry Blake, del

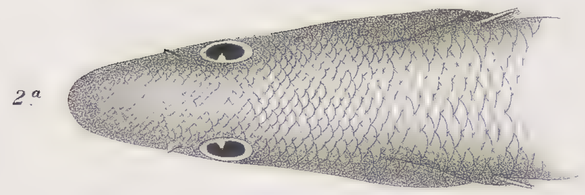
B Meisel, lith

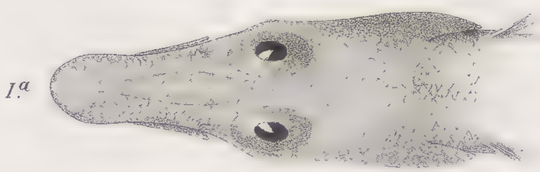
PLATE LX.

Figs. 1–1ª. HALOSAURUS ATTENUATUS Garm. Page 296.

Figs. 2, 2ª. HALOSAURUS RADIATUS Garm. Page 298.







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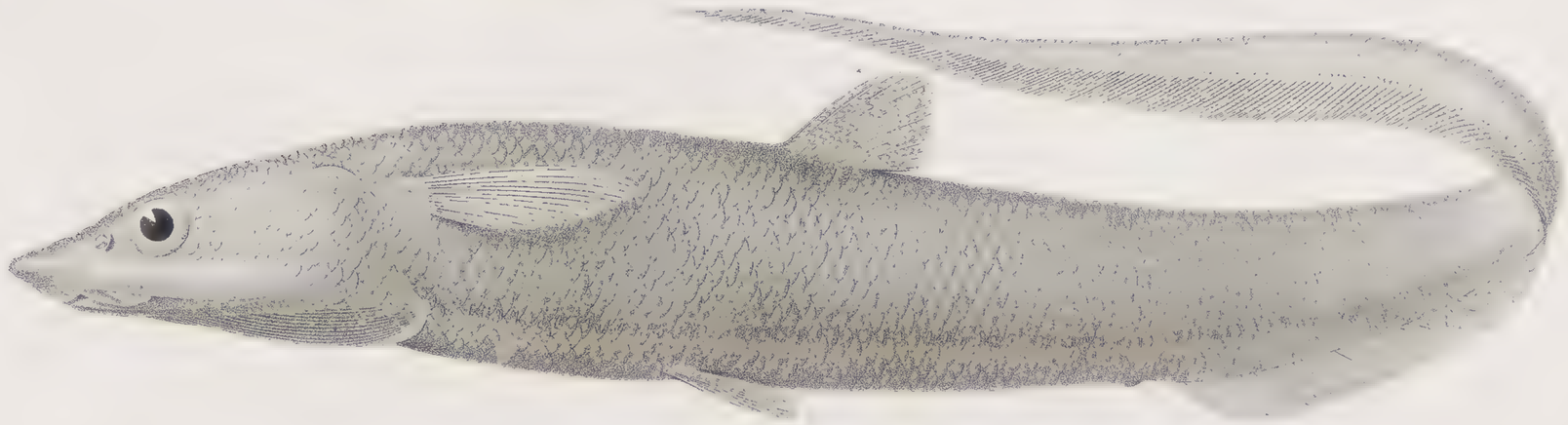


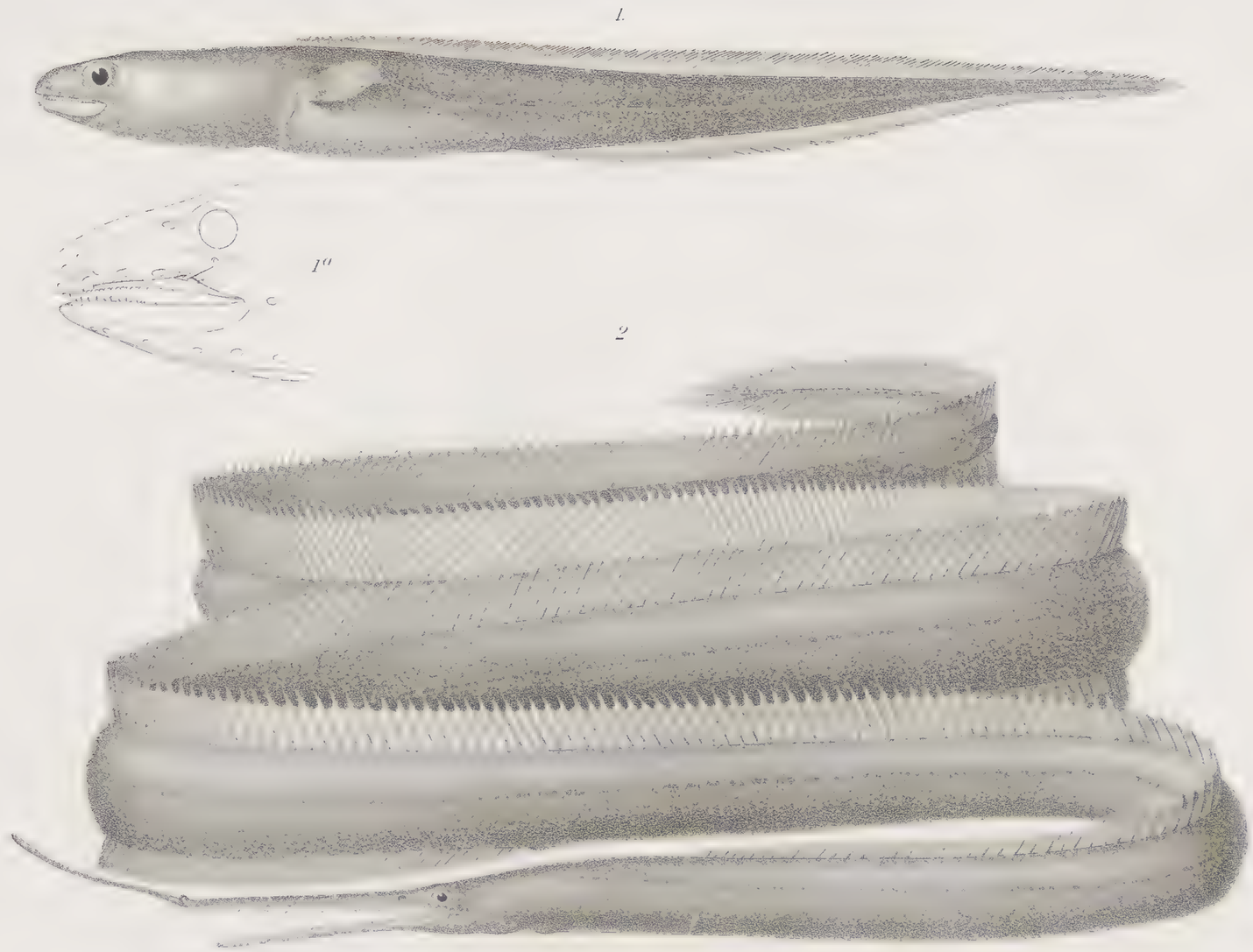
J Henry Blake del

B Meisel Lith

PLATE LXI.

Figs. 1–1ª. Uroconger varidens Garm. Page 304.

Fig. 2. Venefica ocella Garm. Page 318.



J. Henry Bock lith.

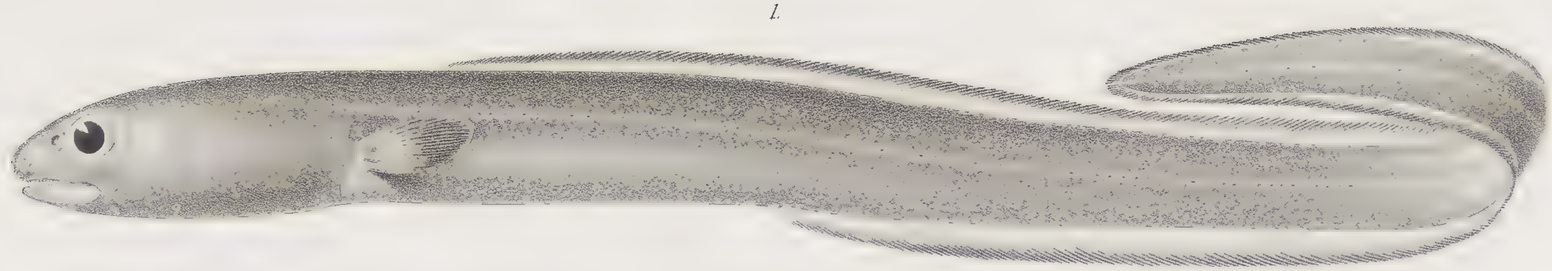
B. Meisel lith.

PLATE LXII.

Fig. 1. Congrosoma Evermanni Garm. Page 308.

Fig. 2. Chlopsis Gilbertii Garm. Page 316.

1.



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J Henry Blake, del

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PLATE LXIII.

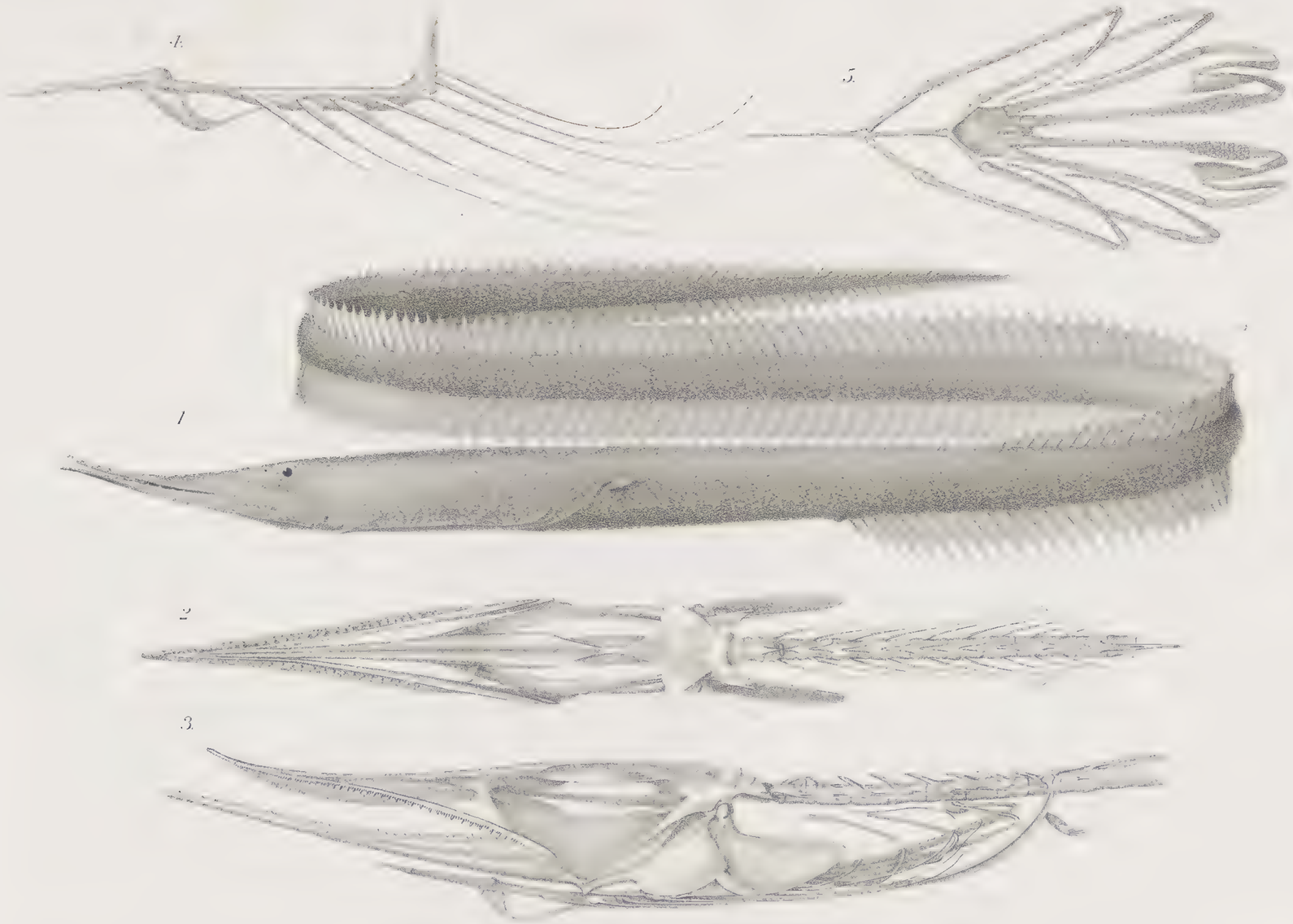
SERRIVOMER SECTOR Garm. Page 320.

Fig. 1. Entire figure, natural size.

Figs. 2–3. Skull to pectoral fins, from top and side, enlarged.

Fig. 4. Hyals and branchiostegal rays, twice natural length.

Fig. 5. Branchial skeleton from above, twice natural length.



J. Henry Blake del.

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PLATE LXIV.

Fig. 1. LABICHTHYS BOWERSII Garm. Page 323.

Fig. 2. CALLORHYNCHUS CALLORHYNCHUS Linn. Egg case. Page 21.

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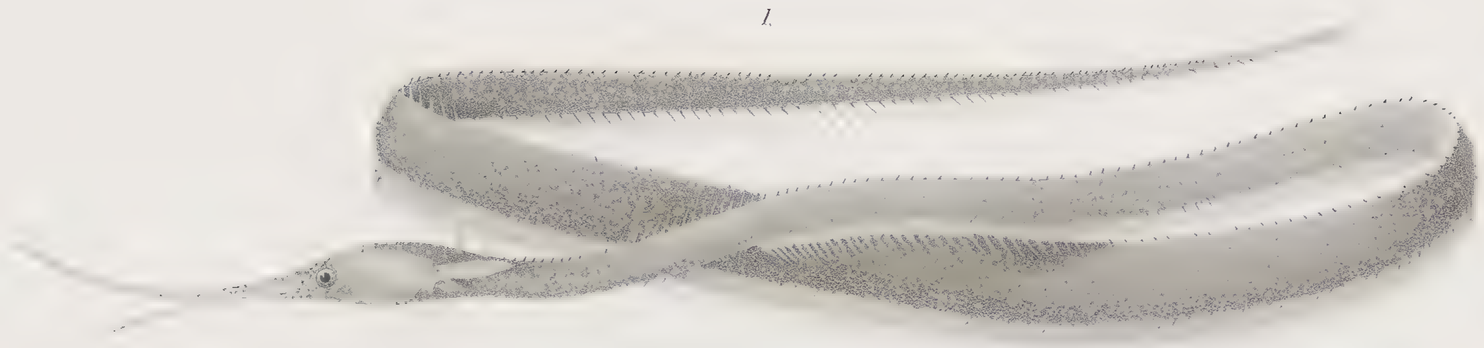

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J. Henry Blake del.

PLATE LXV.

Fig. 1. NEMICHTHYS FRONTO Garm. Page 324.

Fig. 2. ATOPICHTHYS ESUNCULUS Garm. Page 327.

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PLATE LXVI.

Figs. 1–1[b]. ATOPICHTHYS SICARIUS Garm. Page 328.

Figs. 2–2[a]. ATOPICHTHYS CINCTUS Garm. Page 329.

Figs. 3–3[a]. ATOPICHTHYS DENTATUS Garm. Page 330.

Figs. 4–4[a]. ATOPICHTHYS FALCIDENS Garm. Page 331.

Figs. 5–5[a]. ATOPICHTHYS ACUS Garm. Page 332.

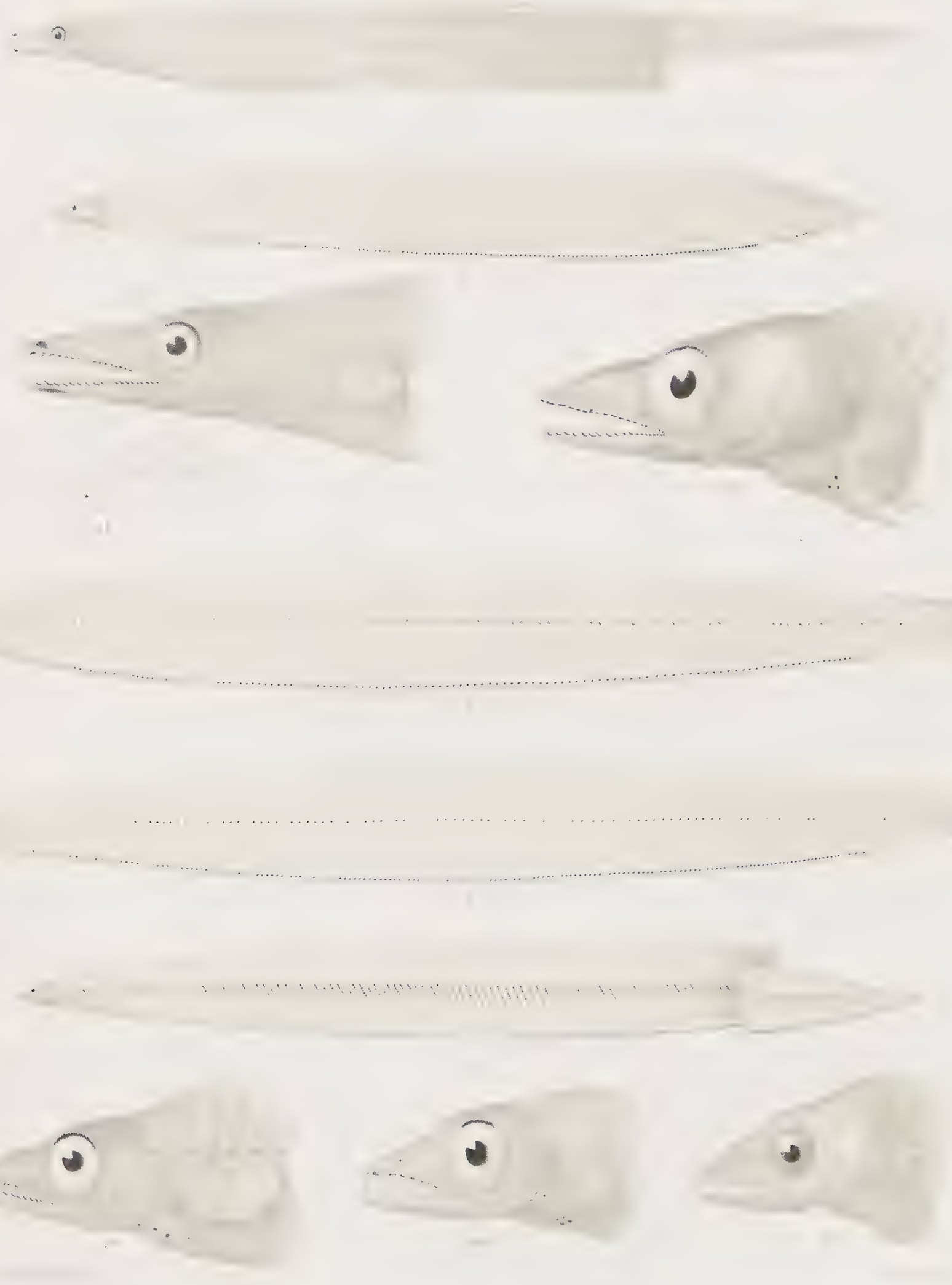

PLATE LXVII.

Figs. 1–1ª. ATOPICHTHYS OPHICHTHYS Garm. Pages 333.

Figs. 2–2ª. ATOPICHTHYS CINGULUS Garm. Pages 334.

Figs. 3–3ª. ATOPICHTHYS LYCHNUS Garm. Pages 335.

Figs. 4–4ª. ATOPICHTHYS OBTUSUS Garm. Pages 337.

Figs. 5–5ª. ATOPICHTHYS LONGIDENS Garm. Pages 338.

PLATE LXVIII.

Fig. 1. MYXINE CIRCIFRONS Garm. Page 344.

Fig. 2. Lower view of head of *M. circifrons.*

Fig. 3. Heart and gills of *M. circifrons.*

Fig. 4. Snout, rostrum and barbels of *M. circifrons.*

Fig. 5. Snout, rostrum and barbels of *M. glutinosa* Linn. Page 348.

Fig. 6. Snout, rostrum and barbels of *M. acutifrons* Garm. Page 347.

Fig. 7. Snout, rostrum and barbels of *M. limosa* Gir. Page 346.

Fig. 8. Snout, rostrum and barbels of *M. australis* Jen. Page 345.

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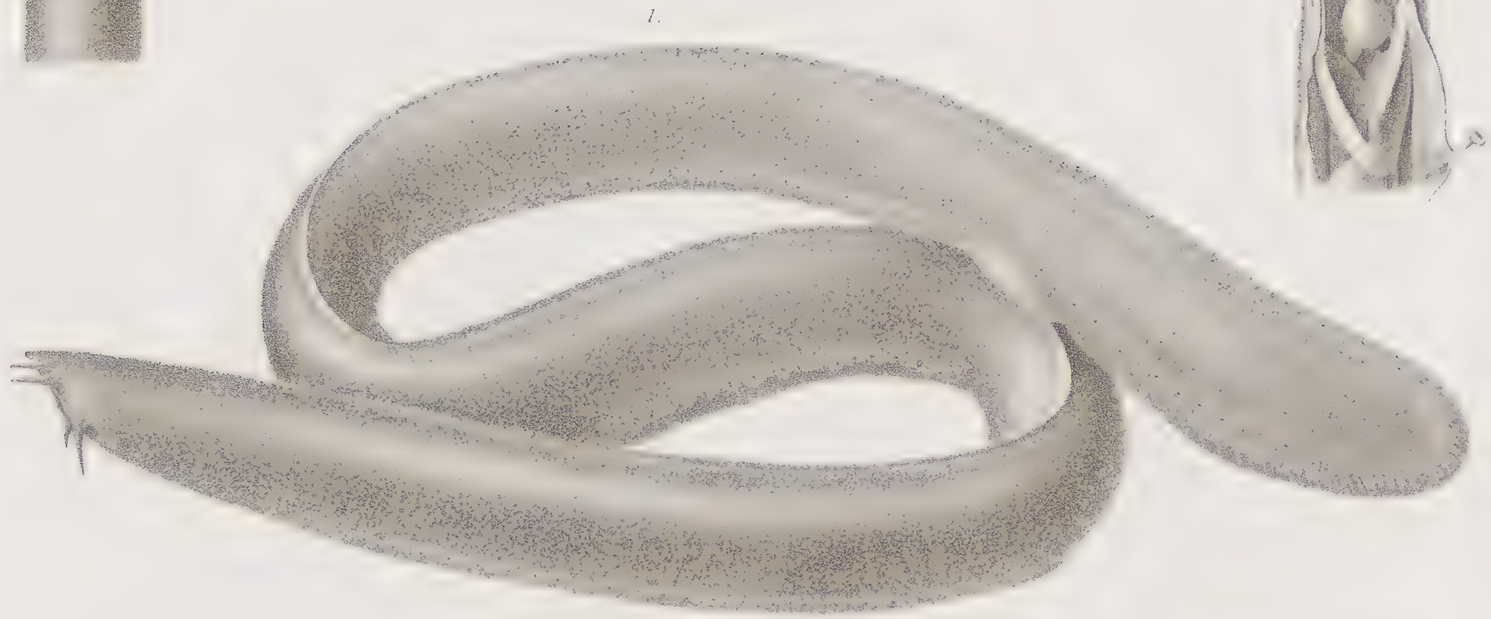

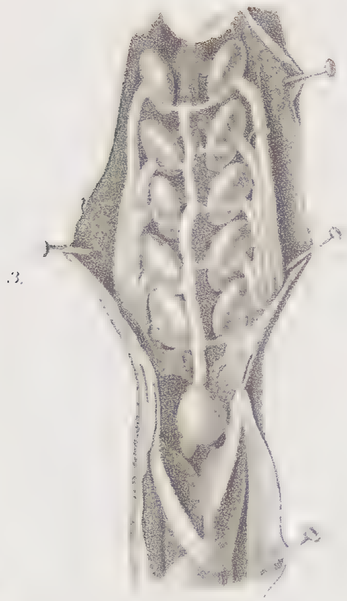

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PLATE LXIX.

Fig. 1. CENTROSCYLLIUM NIGRUM Garm. Pages 28, 352.

Fig. 2. ISISTIUS BRASILIENSIS Q. G. Pages 34, 352.

Fig. 3. Urohyal of *Anthias eos* Gilb. Page 47.

Fig. 4. Urohyal of *Anthias pronotogrammus* Gill.

Fig. 5. Urohyal of *Centristhmus signifer* Garm. Page 48.

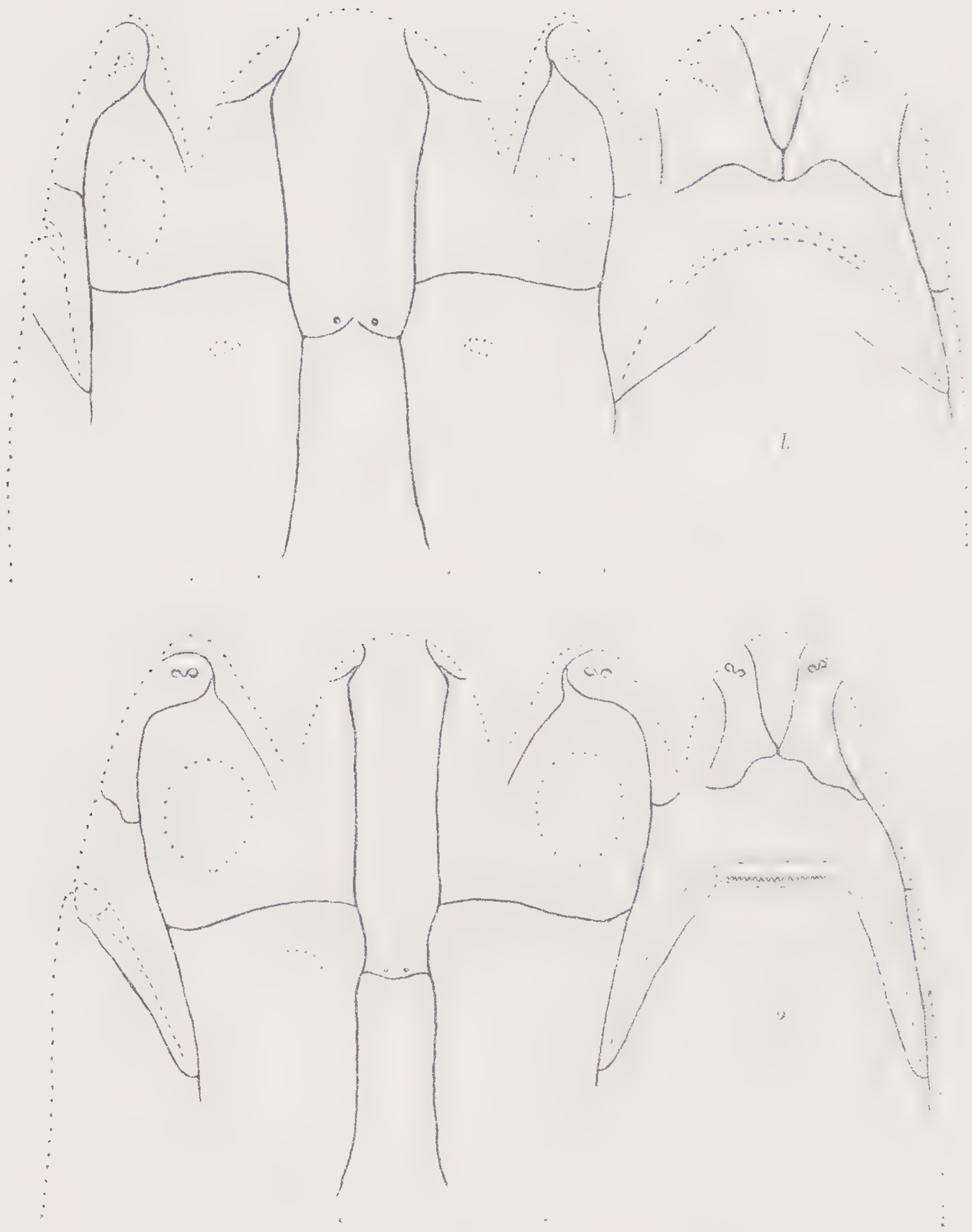

PLATE LXX.

CHLAMYDOSELACHUS ANGUINEUS Garm. Pages 41, 352.

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PLATE LXXI.

Fig. 1. Ectreposebastes imus Garm. Pages 53, 360.

Figs. 2–3. Cottunculus Thomsoni Günt. Page 360.

Fig. 4. Hoplostethus pacificus Garm. Pages 56, 360.

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PLATE LXXII.

Fig. 1. Caulolepis subulidens Garm. Pages 60, 360.

Fig. 2. Melamphaës nigrofulvus Garm. Pages 64, 360.

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PLATE LXXIII.

Figs. 1–2. Chaunax coloratus Garm. Pages 83, 360.

Fig. 3. Lepophidium emmelas Gilb. Pages 142, 360.

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PLATE LXXIV.

Fig. 1. Leucicorus lusciosus Garm. Pages 146, 361.

Fig. 2. Mixonus caudalis Garm. Pages 148, 361.

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PLATE LXXV.

Fig. 1. DICROLENE NIGRA Garm. Pages 150, 361.

Fig. 2. DICROLENE FILAMENTOSA Garm. Pages 149, 361.

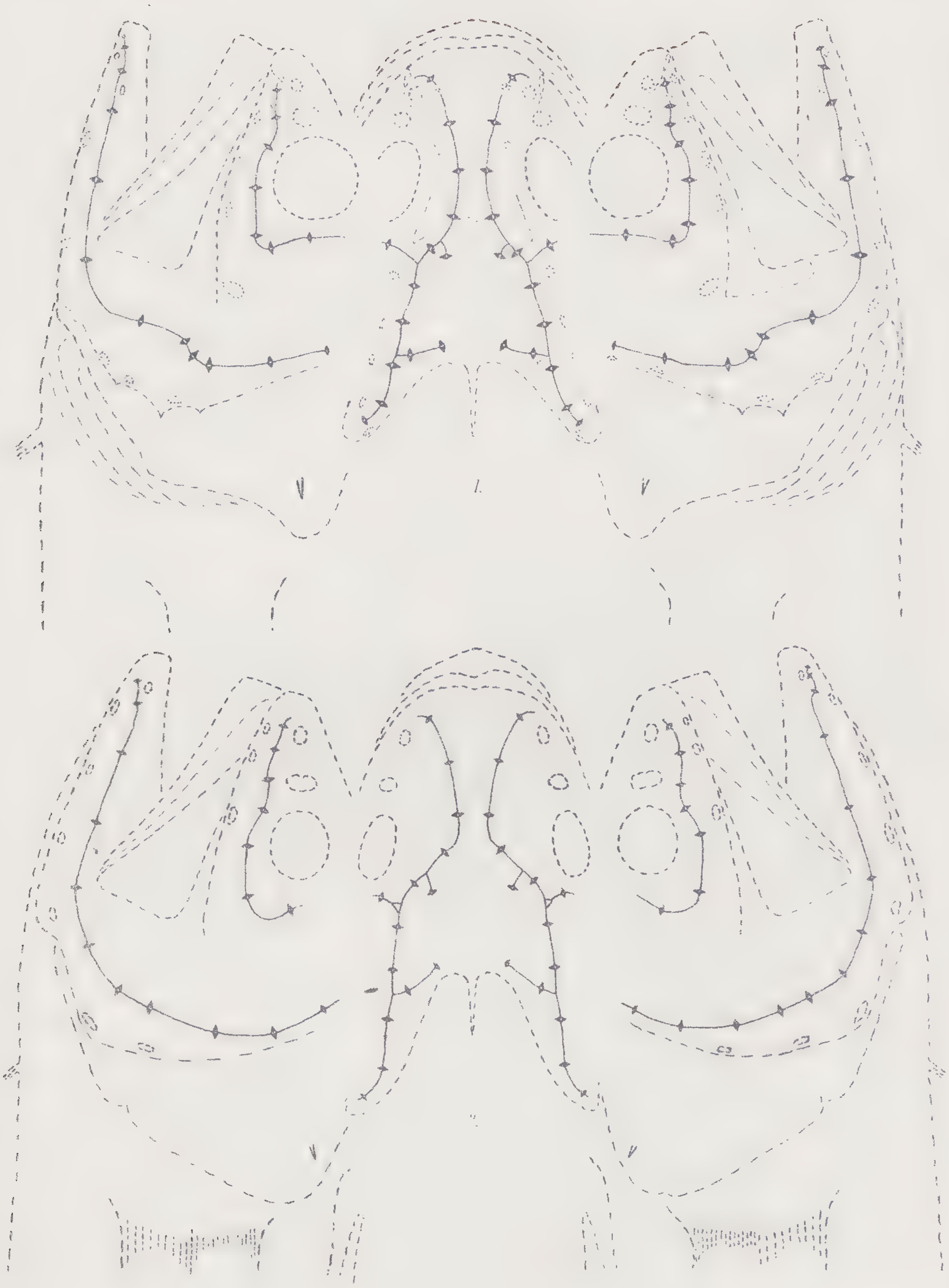

PLATE LXXVI.

Fig. 1. Porogadus longiceps Garm. Pages 153, 361.

Fig. 2. Holcomycteronus digittatus Garm. Pages 163, 361.

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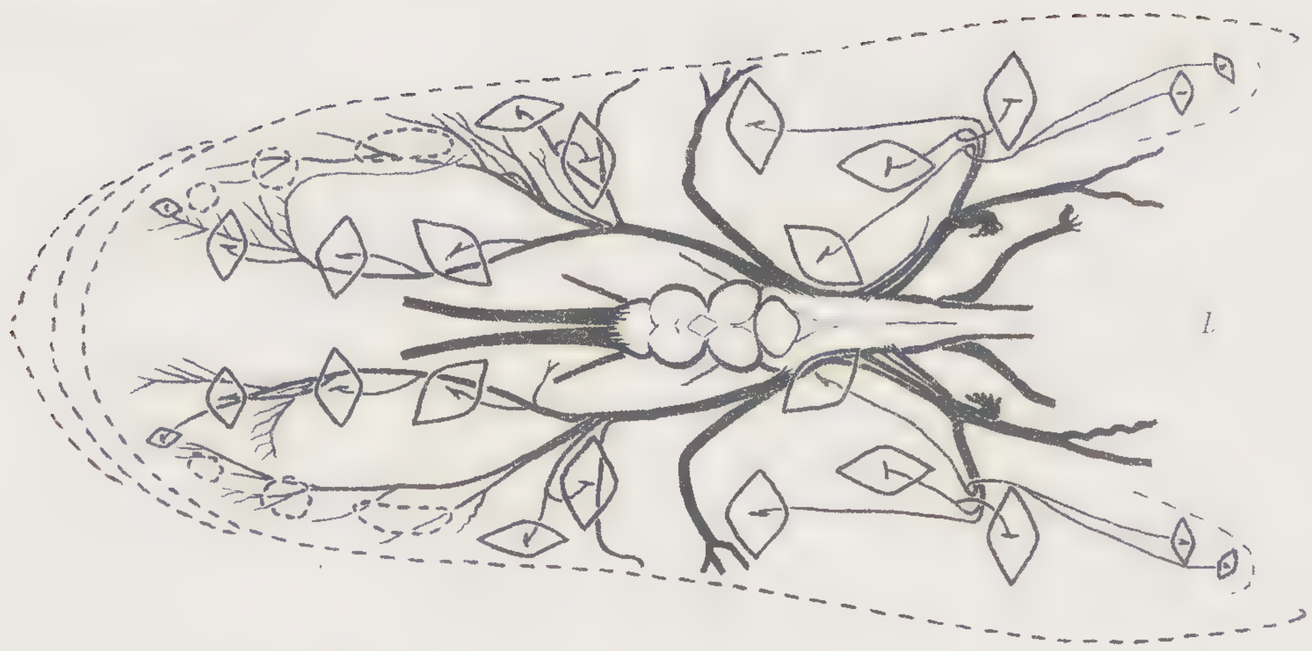
PLATE LXXVII.

BASSOZETUS NASUS Garm. Pages 159, 361.

PLATE LXXVIII.

BASSOZETUS NASUS Garm. Pages 159, 361.



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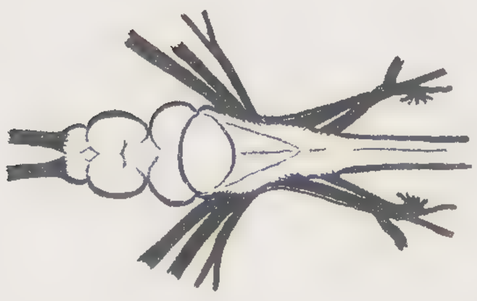

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PLATE LXXIX.

Fig. 1. ERETMICHTHYS OCELLA Garm. Pages 166, 362.

Fig. 2. ERETMICHTHYS PINNATUS Garm. Pages 165, 362.

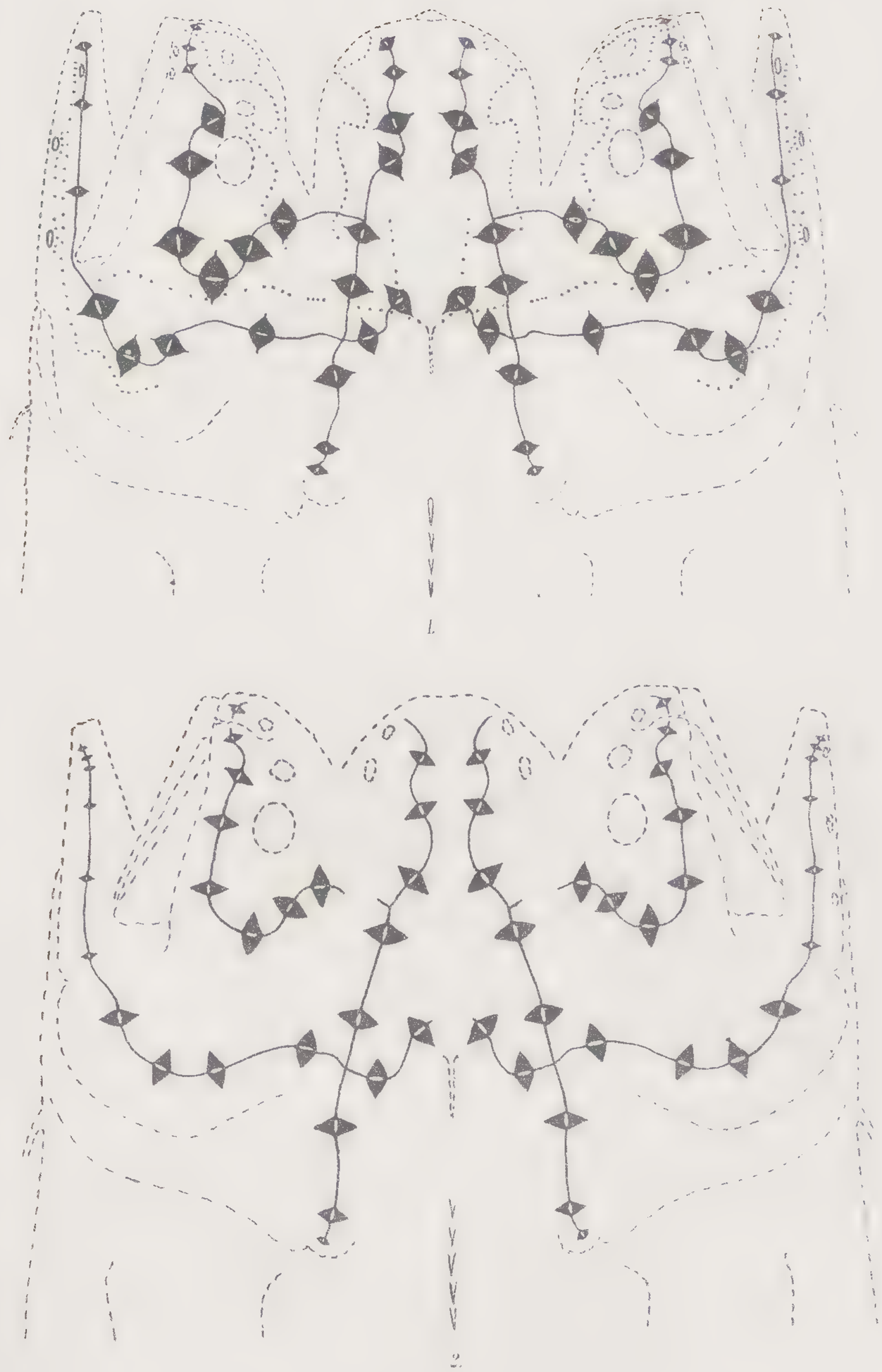

PLATE LXXX.

Fig. 1. Bassogigas stelliferoides Gilb. Pages 161, 362.

Fig. 2. Catætyx simus Garm. Pages 168, 362.

PLATE LXXXI.

Fig. 1. LAMPROGRAMMUS ILLUSTRIS Garm. Pages 174, 362.

Fig. 2. PHYCIS REGIUS Walb. Page 362.

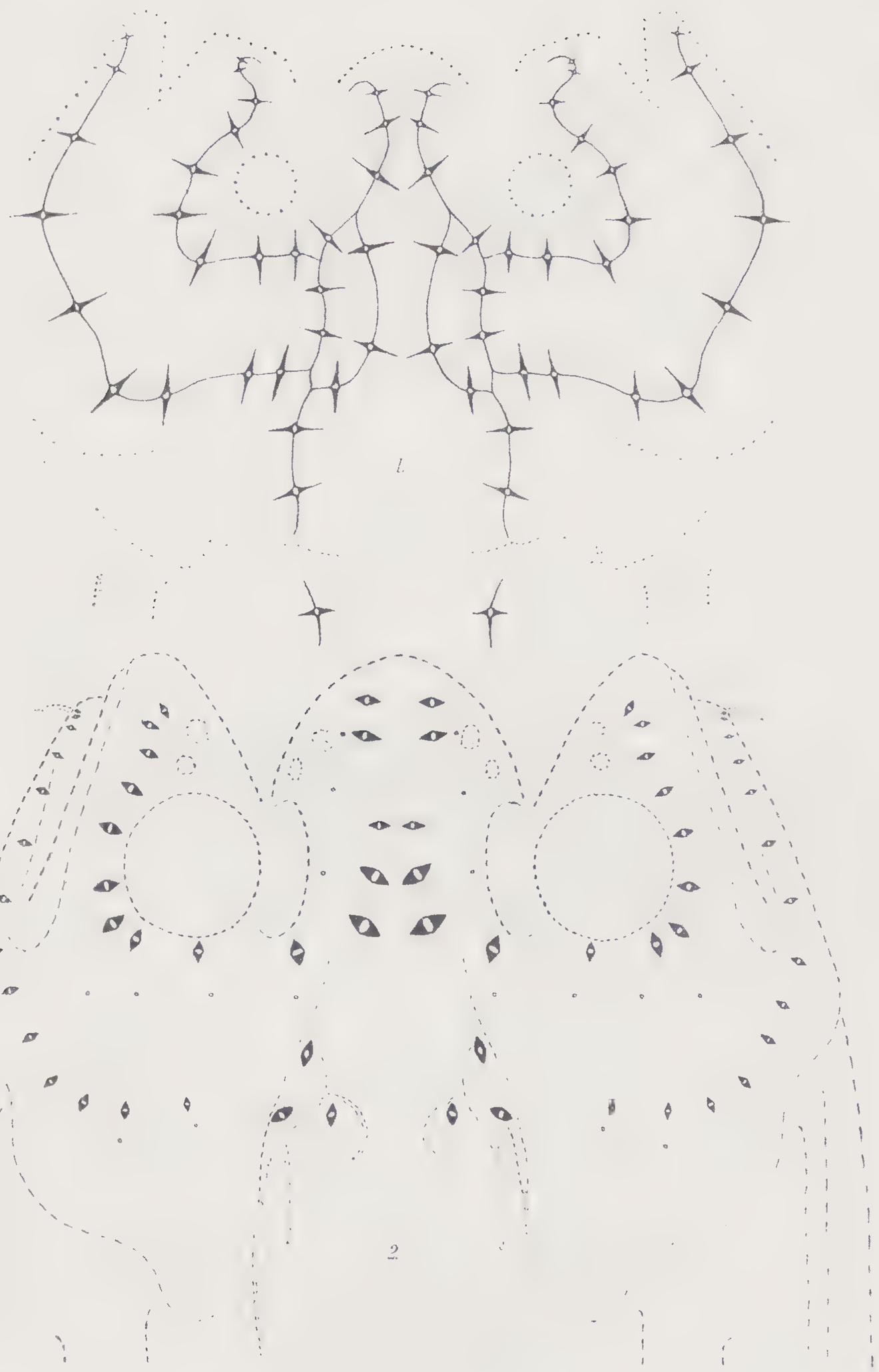
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PLATE LXXXII.

Fig. 1. Merluccius angustimanus Garm. Pages 183, 363.

Fig. 2. Phyciculus rastrelliger Gilb. Pages 189, 363.

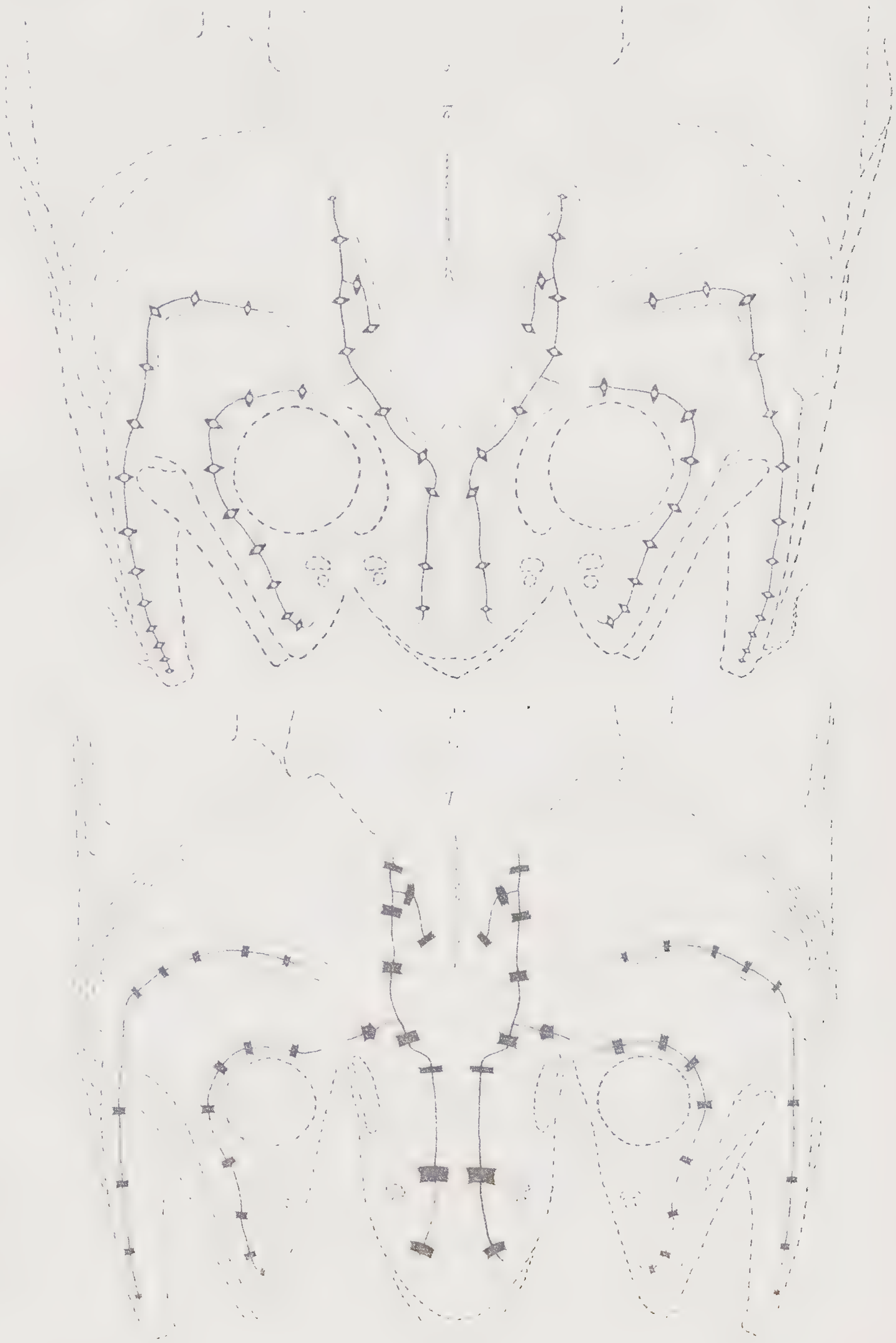


PLATE LXXXIII.

Fig. 1. Microlepidium grandiceps Garm. Pages 181, 363.

Fig. 2. Macrurus angulíceps Garm. Pages 212, 363.

1

2

PLATE LXXXIV.

Figs. 1–2. MACRURUS CANUS Garm. Pages 217, 364.

Figs. 3–6. HALOSAURUS RADIATUS Garm. Pages 298, 364.

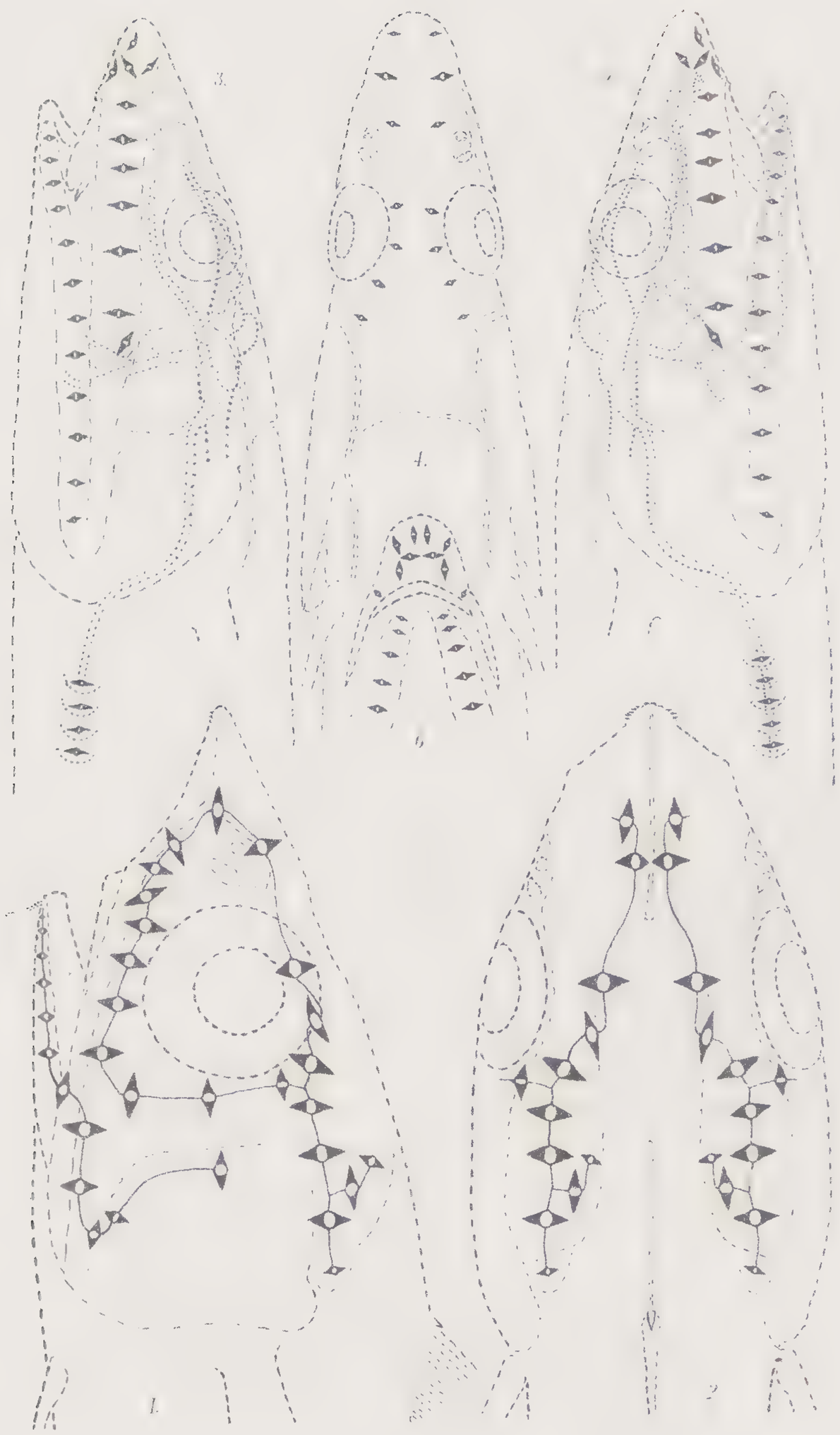

3.
4.
1.
2.

PLATE LXXXV.

CHART OF THE ROUTE.

EXPLORATIONS OF THE
U.S. FISH COMMISSION
STEAMER ALBATROSS
Lieut. Comdr. Z.L. Tanner. U.S.N., Comdg.
February to April 1891
Compiled from the latest U. S. Hydrographic Office charts with additions by the U.S.F.C. Steamer Albatross.
Soundings represented thus: 2256, are by the U.S.F.C. Str. "Albatross" 1888
" " 2280, " " " 1889
" " 2232, " " " 1891
" " 2004 are from other sources
100 fathom line shown thus:
500 " "
1000 " "
1500 " "
2000 " "
P. Pebbles, Co. coral, Gl. globigerina, M. mud, O. ooze, S. sand, Sh. shells, Sp. specks, G. gravel, fne. fine, hrd. hard, sft. soft, rky. rocky, brk. broken, bk. black, rd. red, gn. green, gy. gray, yl. yellow, bn. brown, dk. dark, lt. light, wh. white.
MEXICO
GULF OF MEXICO
GULF OF CALIFORNIA
GUATEMALA
HONDURAS
SALVADOR
NICARAGUA
COSTA RICA
CARIBBEAN SEA
COLOMBIA
Gulf of Panama
GALAPAGOS ISLANDS
(For Soundings among Islands See Plate IV)
REVILLA GIGEDO ISLANDS
Track of the U.S.F.C. Str. "Albatross" 1891
Guaymas
Agiabampo
Topolobampo
Altata
Mazatlan
San Blas
Banderas Bay
C. Corrientes
Manzanillo
Maruata
Petacalco Bay
Acapulco
P. Angeles
Salina Cruz
Tehuantepec
La Puerta
Champerico
S. Jose
Acajutla
La Libertad
Gulf of Fonseca
Corinto
Gulf of Nicoya
Gulf of Dulce
Coiba I.
Mariato Pt.
C. Mala
Panama
C. Corrientes
Choco Bay
Gorgona
Malpelo I.
Galera Pt.
C. San Francisco
C. San Lorenzo
Plata I.
Cocos I.
Rivadeneyra Shl. pos. doubtful
Culpepper I.
Wenman I.
Abingdon I.
Bindloe I.
Tower I.
Albemarle I.
James I.
Indefatigable I.
Chatham I.
Charles I.
Hood I.
Barrington I.
Narborough I.
Ballenas Bay
Concepcion Bay
Carmen
Sta. Catalina
S. Jose
Ceralbo
La Paz
Magdalena Bay
C. San Lazaro
C. San Lucas
Las Tres Marias
S. Benedicto
Socorro
Roca Partida
Clarion
Passion Rock (pos. doubtful)
500 fathoms
1000 fathoms
1500 fathoms
2000 fathoms

PLATE A.

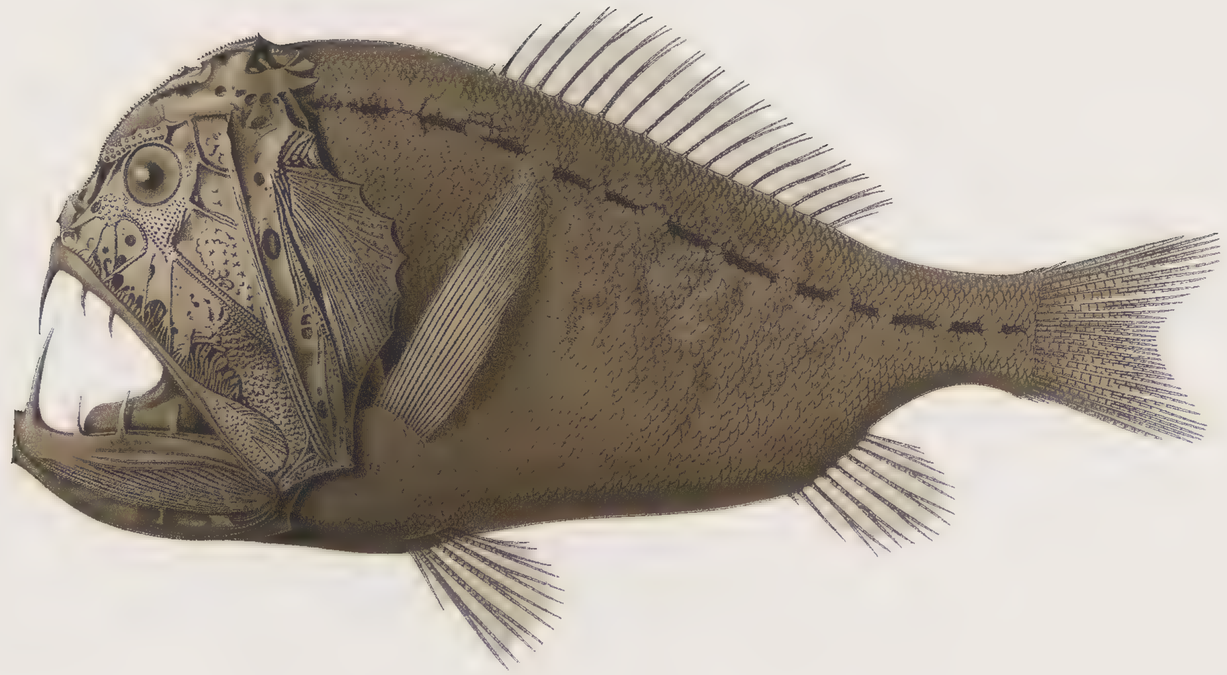
Fig. 1. HOPLOSTETHUS PACIFICUS Garm. Page 56.

Fig. 2. PERISTEDIUM CRUSTOSUM Garm. Page 112.

A.M.Westeréen. del. B.Meisel. lith

PLATE B.

CAULOLEPIS SUBULIDENS Garm. Page 60.



A. M. Westergren, del.

B. Meisel lith.

PLATE C.

CHAUNAX COLORATUS Garm. Page 83.

A.M.Westergren, del.

B. Meisel, lith

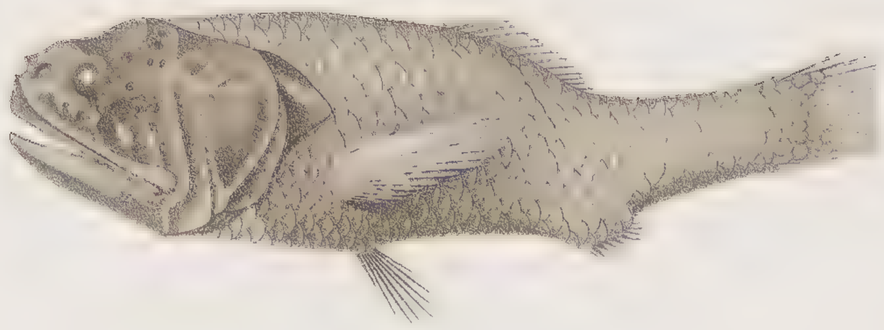
PLATE D.

Fig. 1. MELAMPHAËS MAXILLARIS Garm. Page 66.

Fig. 2. MELAMPHAËS NIGROFULVUS Garm. Page 64.

Fig. 3. PARALIPARIS FIMBRIATUS Garm. Page 116.

1.



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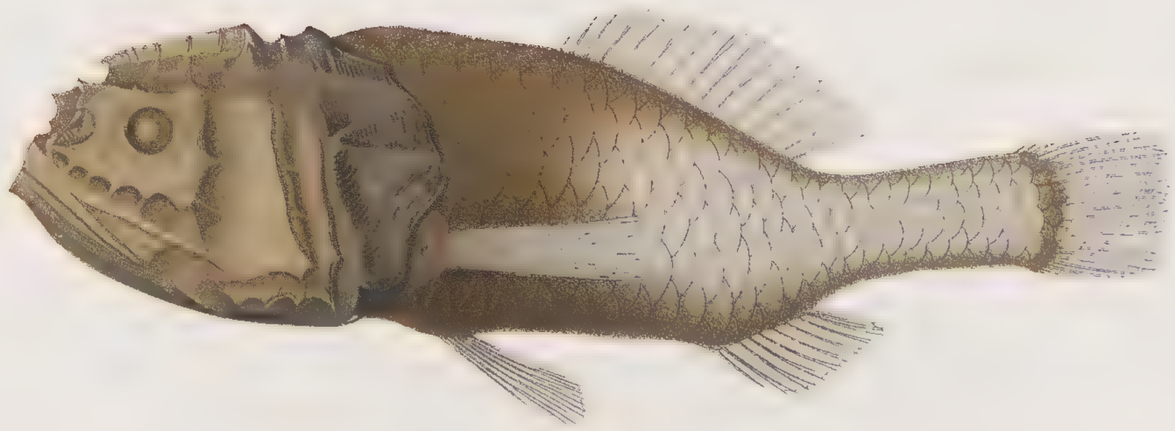

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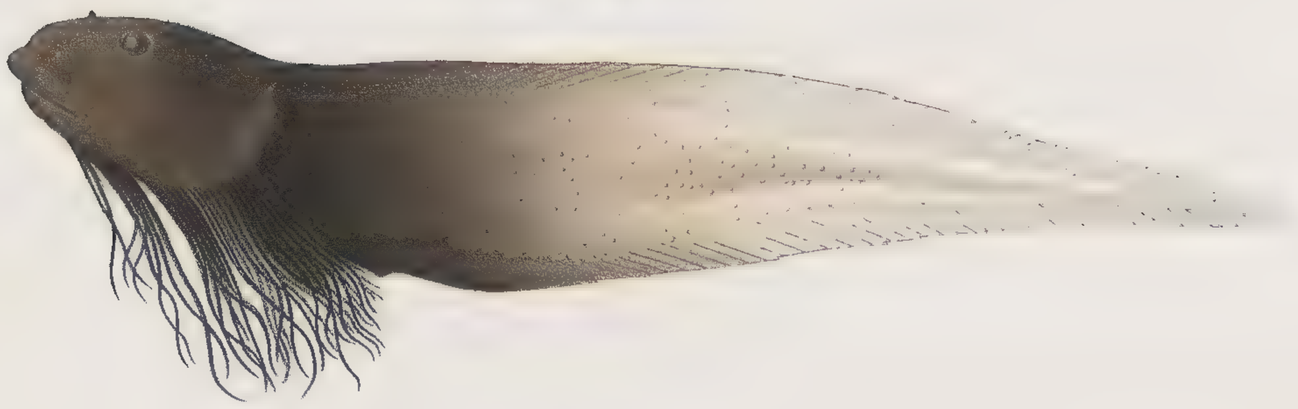


A.M Westergren, del

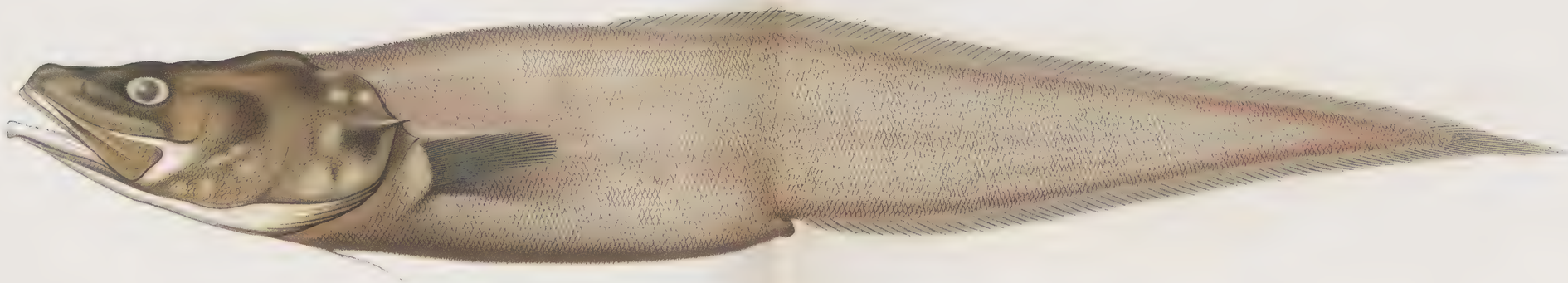
B Meisel, lith

PLATE E.

Fig. 1. MAYNEA BULBICEPS Garm. Page 140.

Fig. 2. CATÆTYX SIMUS Garm. Page 168.

2.



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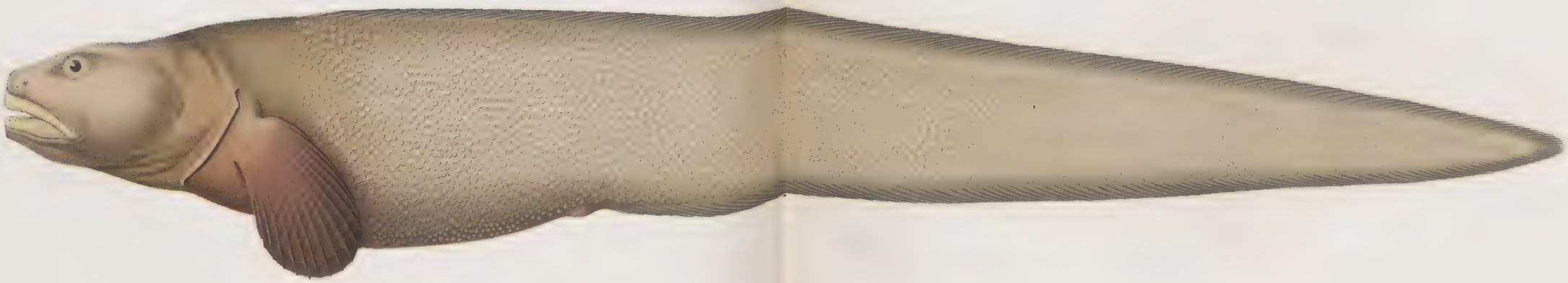


A. M. Westergren, del.

B. Meisel, lith.

PLATE F.

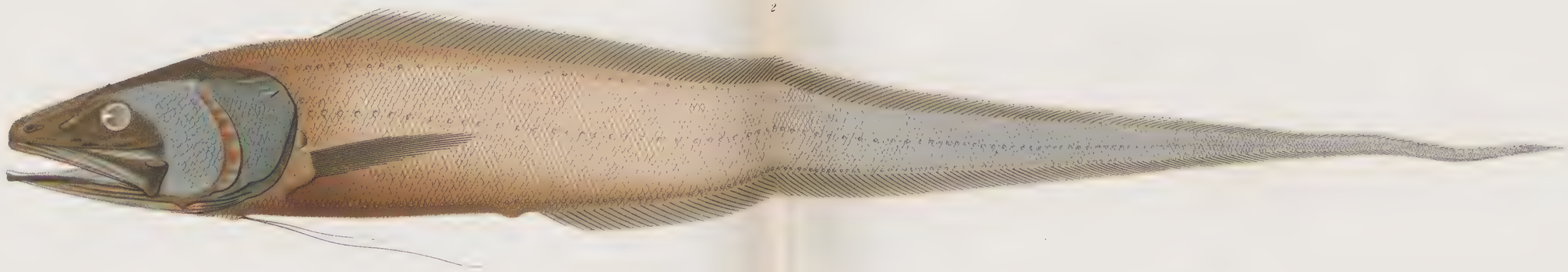
Fig. 1. Dicrolene filamentosa Garm. Page 149.

Fig. 2. Porogadus longiceps Garm. Page 153.

Fig. 3. Acanthonus spinifer Garm. Page 170.

Fig. 4. Sciadonus pedicellaris Garm. Page 172.

2



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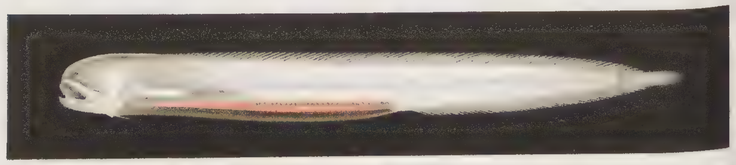

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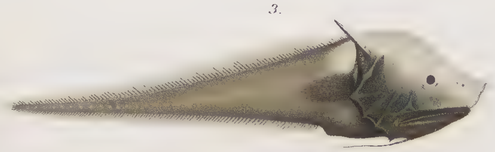

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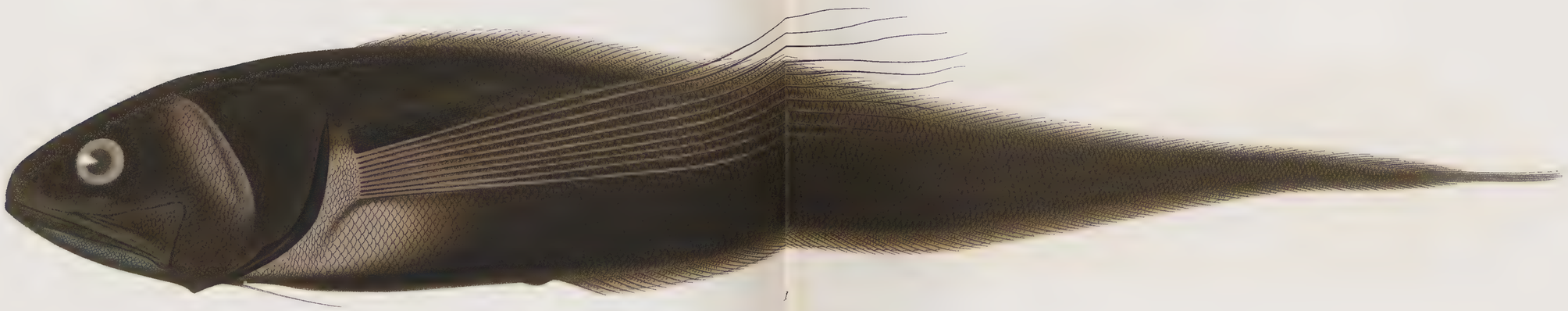
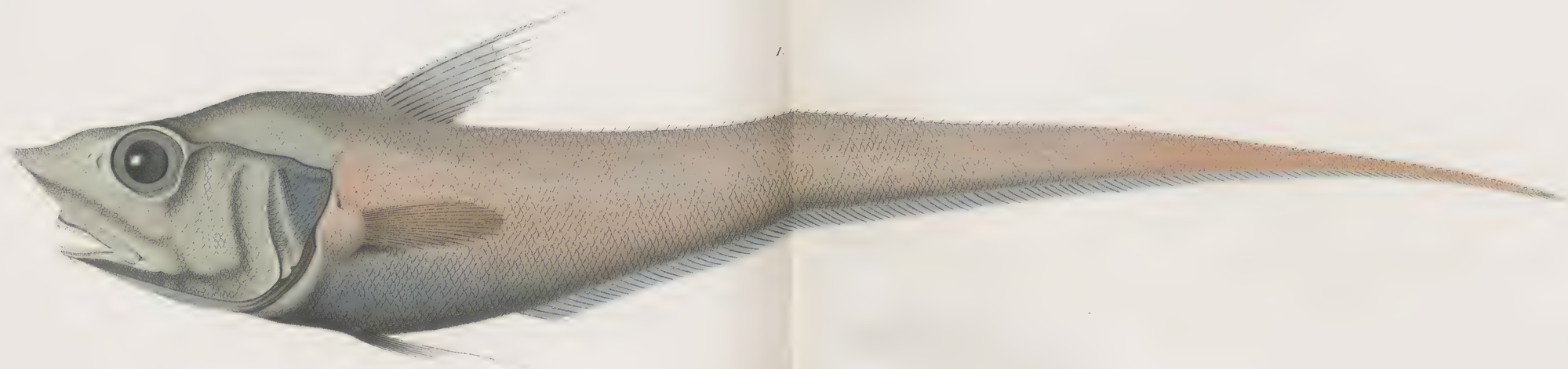


1

PLATE G.

Fig. 1. MACRURUS ANGULICEPS Garm. Page 212.

Fig. 2. TRACHYRHYNCHUS HELOLEPIS Gilb. Page 218.



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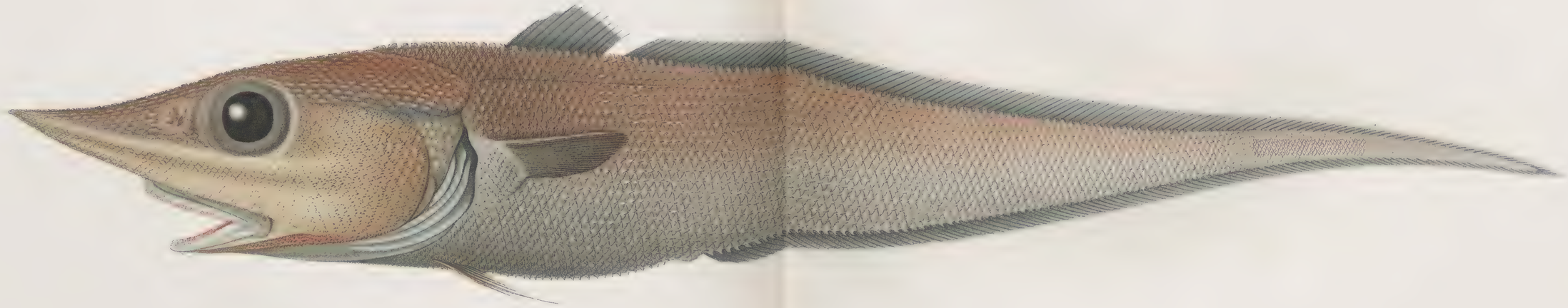


2.

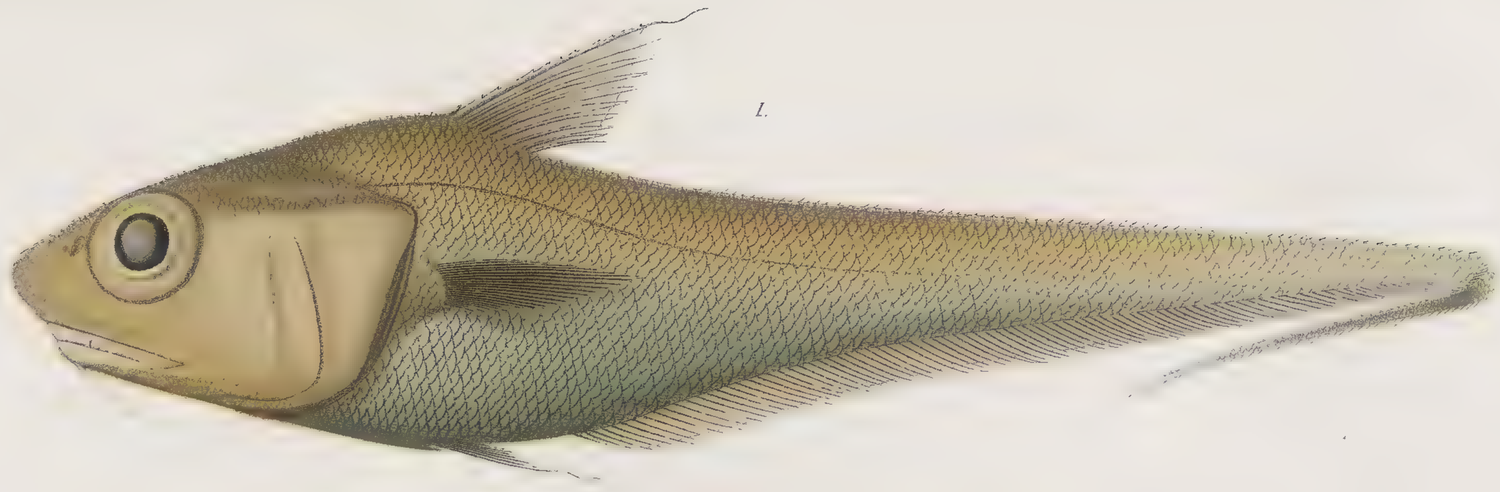
A.M. Westergren, del.

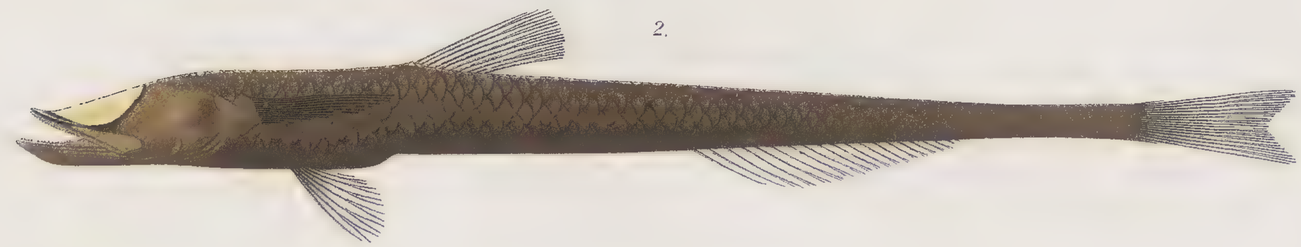
E. Mesel lith.

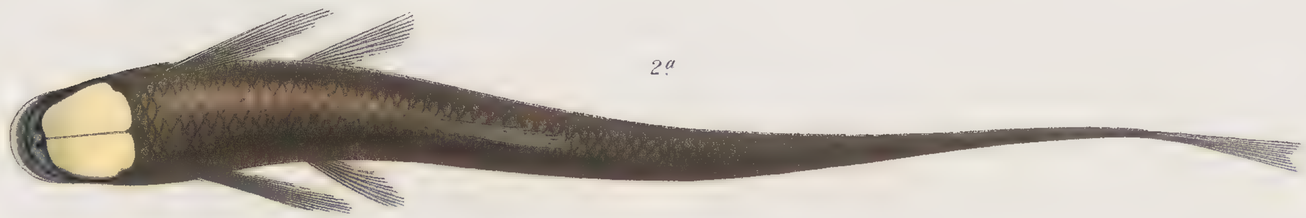
PLATE H.

Fig. 1. Macrurus gracillicauda Garm. Page 206.

Figs. 2, 2ª. Ipnops Agassizii Garm. Page 259.







A.M.Westergren, del. B.Meisel lith.

PLATE J.

Figs. 1–1^b. Argyropelecus lychnus Garm. Page 234.

Fig. 2. Maurolicus lucetius Garm. Page 242.

Fig. 3. Cyclothone signata Garm. Page 246.

Fig. 4. Cyclothone acclinidens Garm. Page 247.

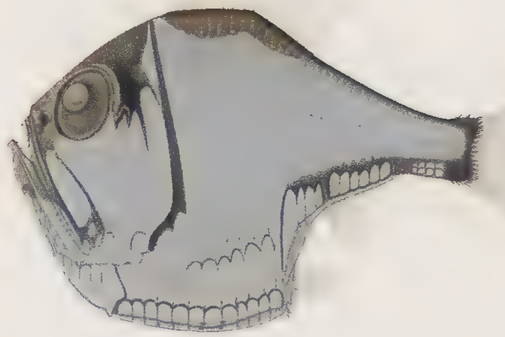
Fig. 5. Myctophum tenuiculum Garm. Page 262.

2.

3.

1.

1a



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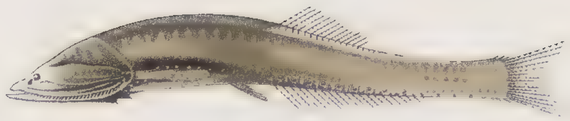

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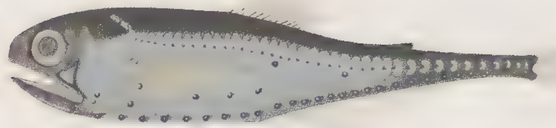


A M Westergren, del

B. Meisel lith

PLATE K.

Fig. 1. Bathypteroïs pectoralis Garm. Page 257.

Figs. 2, 2ª. Chauliodus barbatus Garm. Page 271.

Fig. 3. Chauliodus Sloani Bl. Schn. Page 274.

PLATE L′.

Fig. 1. Entomacrodus cruentatus Garm. Page 123.

Fig. 2. Teuthys elegans Garm. Page 70.

Fig. 3. Synodus simulans Garm. Page 251.

Figs. 4–4^{b}. Notacanthus spinosus Garm. Page 301.

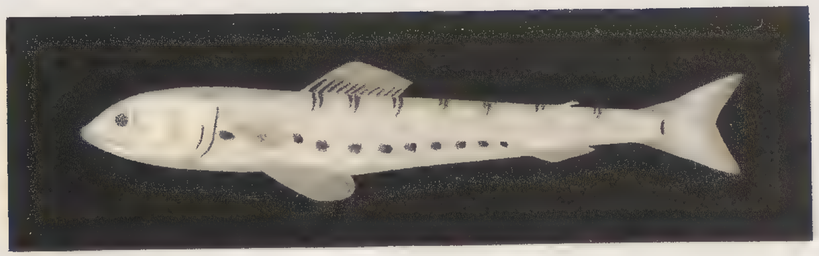
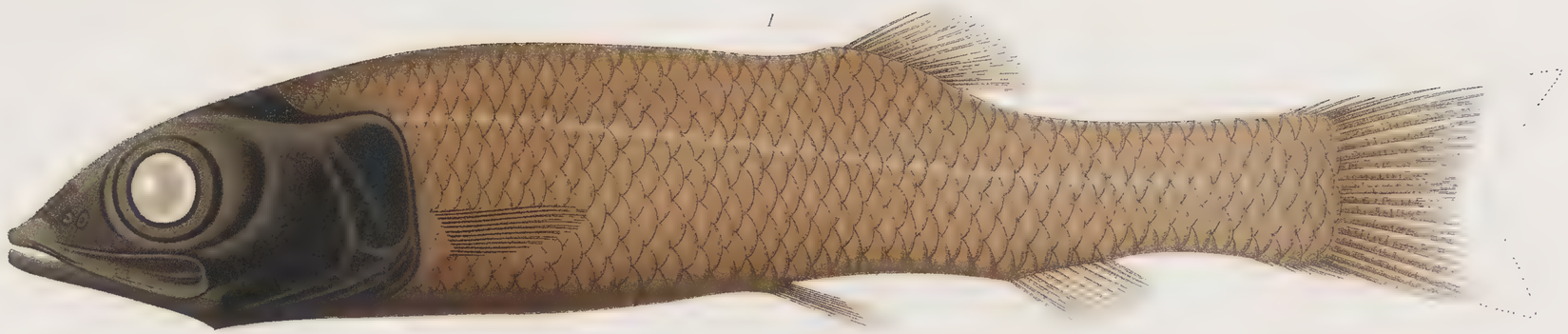


PLATE M.

Fig. 1. BATHYTROCTES INSPECTOR Garm. Page 288.

Figs. 2, 2ª. VENEFICA TENTACULATA Garm. Page 319.



1

2

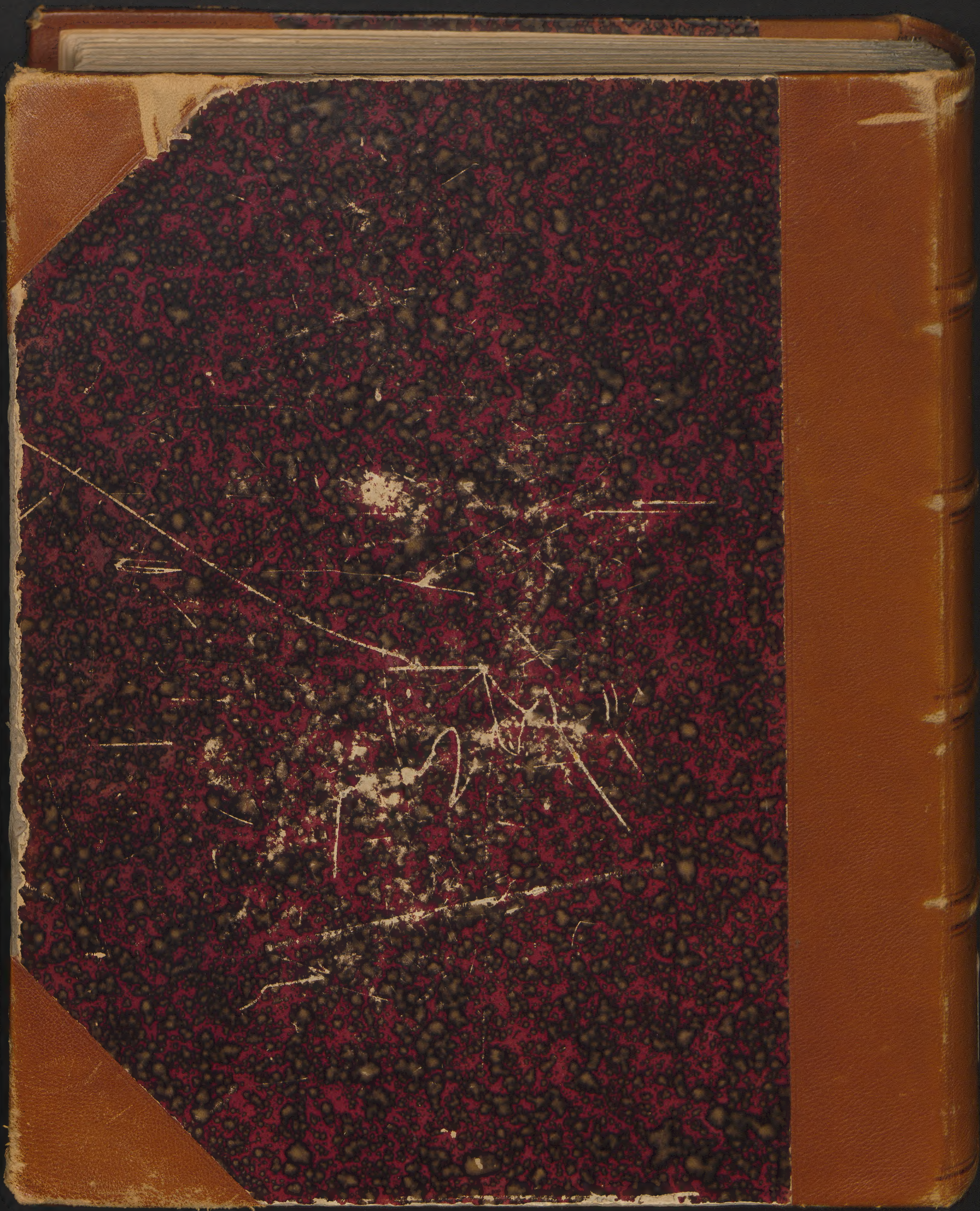
2a

PLATE N.

XENOMYSTAX RICTUS Garm. Page 315.

A M Westergren, del

Date Due

DEC 77

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